

# PROJECT CONCERN INTERNATIONAL

---

111 1 1995

## FINAL EVALUATION REPORT

June 3 - 17, 1994

CHILD SURVIVAL VII:  
Improving Immunization Coverage and Village Health Post  
(*Posyandu*) Implementation

MALUKU PROVINCE, INDONESIA

September 1, 1991 - September 30, 1994

*Implemented by:*

Project Concern International  
and  
Ministry of Health, Maluku

*Evaluation Team:*

Partohoedoyo Soetaryo, MD, MPH  
Wibowo, MD, MPH  
Jeffrey Billings, MPH, MIA

*Project Director:*

J. Stephen Robinson, MD, PhD, MPH

---

Project Concern International  
3550 **Afton** Road, San Diego, California 92123  
Telephone: (619) 279-9690 Fax: (619) 694-0294

## TABLE OF CONTENTS

	Page
INTRODUCTION .....	·
I. Project Accomplishments and Lessons Learned .....	1
. Project Accomplishments .....	1
B. Project Expenditures .....	3
C. Lessons Learned.. .....	4
II. PROJECT SUSTAINABILITY .....	20
A. Community Participation .....	20
B. Ability and Willingness of Counterpart Institutions to Sustain Activities .....	23
C. Attempts to Increase Efficiency .....	27
D. Cost Recovery Attempts .....	28
E. Household Income Generation .....	29
F. Other .....	29
III. EVALUATION TEAM .....	31
APPENDICES:	
1. Final Pipeline Analysis	
2. Final Survey Report	

## LIST OF TERMS

<b>BangDes</b>	Village Development Office
<b>BKKBN</b>	National Family Planning Board
<b>Bupati</b>	District governor
<b>Camat</b>	Sub-district governor
<b>EPI</b>	Expanded Program for Immunization
<b>Kader</b>	Community health volunteer
<b>MOH</b>	Ministry of Health
<b>PKK</b>	Women's Family Welfare Organization
<b>PMT</b>	<i>Posyandu</i> Management Team
<b>Posyandu</b>	Integrated village health post
<b>RRI</b>	Radio of the Republic of Indonesia
<b>TBA</b>	Traditional Birth Attendant

## INTRODUCTION

Project Concern International (PCI) has been involved in health and development activities in Indonesia for over twenty years. In the Fall of 1991, PCI began working in the Province of Maluku with support from a **USAID** Child Survival VII (CS-VII) grant. This area was chosen by request of the Ministry of Health (MOH) Director General for Community Health, Dr. Leimena, due to its delayed health development, and as the province had the lowest immunization coverage in all of Indonesia. The overall Child Survival project design supports activities to enhance *Posyandu* implementation and attendance focussing on improving immunization coverage while promoting the identification of high-risk births and appropriate diarrheal disease management.

As part of the Child Survival grants program, **USAID** requires that each recipient organization (PVO) conduct a final project evaluation. The purpose of the evaluation is to assess the level of accomplishment the organization has achieved during the life of the project. This assessment allows **USAID** to determine how effectively its funds have been used, and allows the PVO and its counterparts to learn valuable lessons which can be applied to future child health programs. The Maluku Child Survival project has recently been approved by **USAID** for a three-year extension (CS-X). Thus, the lessons learned from the final CS-VII evaluation will be helpful in the design and implementation of the extension project.

PCI worked in partnership with the Maluku Ministry of Health to implement the CS-VII project, rather than operating alone. PCI's role was primarily to train personnel and to facilitate the development and Functioning of systems for health delivery and support. So it is often difficult to assess the results of PCI's work versus the work of the MOH and other counterparts. This report will focus on those objectives and activities which were specifically the responsibility of PCI, as laid out in the DIP.

The final evaluation was conducted from June 3 to 17, 1994 by an evaluation team selected by PCI. The team members included Dr. Partohoedoyo Soetaryo from the Directorate General of Community Health, MOH; Dr. Wibowo from UNICEF/Indonesia; and Mr. Jeffrey Billings from PCI headquarters. The evaluation methodology involved conducting interviews with MOH officials, local government leaders, health center staff, **TBAs**, teachers, students and PMT members in four of the five project districts. **The team** discussed the various findings, compiled its notes and presented a draft report to the MOH, before departing from Maluku.

**Also** included in this report are the results of the project's final survey, conducted in May by the staff of **PCI/Maluku**. The survey utilized the 30-cluster methodology and the standard KPC questionnaire. (The complete survey report can be found in Appendix 2.)

### I. PROJECT ACCOMPLISHMENTS AND LESSONS LEARNED

#### A. Project Accomplishments

AI-A3. The overall goal of the CS-VII project was to decrease infant and child morbidity and mortality in the Province of Maluku. Toward this end, eight specific objectives were adopted. Two of these objectives were revised during midterm evaluation, to reflect the findings of the phase II baseline survey, which were lower than anticipated. The others have remained the same. Following is a listing of the project objectives and a statement of the level of accomplishment for each one.

The targets for these objectives were measured with baseline and final project surveys, utilizing the 30-cluster methodology and the standard KPC questionnaire. For the two EPI objectives, results are also presented from the MOH's Local Area Monitoring system (PWS), which collects and tabulates coverage data for seven immunization indicators, based on the number of doses of vaccine administered in the program area.

1. Increase to 65% the proportion of children between 12 and 23 months of age who are fully immunized by 12 months of age.

The final project survey found 60% complete coverage, as compared to 45% found at the baseline. Using the PWS monitoring system, for which an end-of-project target of 80% was set, the final coverage was found to be 85%, compared to a baseline figure of 43%. The immunization coverage rate would have been higher (approximately 64%) if infants who received vaccine after one year of age had been counted.

2. Increase to 45% the proportion of mothers of children under two years of age whose most recent delivery was fully protected from tetanus.

The final project survey found a coverage of 23%, compared to 16% at the baseline. The PWS system found a coverage rate of 42% at the end of the project, as compared to 20% at the baseline.

The target of 45% was unrealistically high, and should have been closer to 30%. For mothers of children under one year of age, who have had the opportunity to be influenced by the trained TBAs and the TT5x program within the last year, the coverage was 35%.

3. Increase to 65% the proportion of children under two who possess a Road-to-Health Card.

The final survey showed that 68% of children under two have a RTH, compared to 49% at the baseline.

4. Increase to 45% the average proportion of children under two who attend *Posyandu* per month.

An average of 48% of these children attend the *Posyandu* each month, according to the final survey. At the baseline, this figure was 30%.

5. Increase to 40% the proportion of mothers of children under two with episodes of diarrhea occurring during the last two weeks who were treated with ORS (Oralit or SSS).

The final survey found that 50% of these children received ORS during their episode of diarrhea, an increase from 28% at the baseline.

6. Increase to 50% the proportion of mothers of children under two who know how to properly provide Oral Rehydration Therapy (ORT) to their child with an episode of diarrhea during the last two weeks.'

---

'Proper administration of ORT is defined as giving the same or greater quantity of breastmilk, other fluids and food to a child with diarrhea.

The final survey found that 30% of these mothers knew how to properly provide ORT, compared to 22% at the baseline.

7. Increase to 25% the proportion of mothers who have at least one packet of **Oralit** in the home.

At the final survey, 20% of the homes were found to have a packet of Oralit, as compared to a baseline level of 13%. This can be explained partly by the fact that the **Oralit** distribution campaign could not be implemented, due to coordination problems beyond control of the project. This campaign has been re-scheduled to begin in August 1994.

8. Increase to 65% the proportion of pregnant women who deliver assisted by a trained TBA of all women assisted by **TBA**s.

The baseline and final surveys show an increase from 61% to 67% was achieved during the life of the project. A target reflecting a low increase was selected because much of the population is located in the cities, where no **TBA**s were trained. The baseline and final surveys, however, measured mothers in all areas (both urban and rural) of the province.

A4. There were several accomplishments which were unplanned in the original project design, but which contributed markedly to the success of the Maluku project, and in some cases extended its influence to other parts of Indonesia. These include the introduction of a new Tetanus Toxoid Lifetime card for women, and a major revision in the government's immunization policy regarding **TT** for all women of child-bearing age; the development and introduction of the **MANISE** computerized immunization monitoring program; and the establishment of an immunizer peer training program. Each of these components is described in further detail in this report.

A5. The report of the project's final survey and the results for each relevant indicator are included in Appendix 2.

## B. Project Expenditures

B1. The final pipeline analysis is included in Appendix 1.

B2. The total **USAID** portion of the Maluku budget was \$715,051, and total expenditures for the project amounted to \$685,003. For the PC1 match portion, the total budget was \$242,769, and total expenditures reached \$380,470. Thus the project underspent the **USAID** budget by \$30,048, and overspent the PC1 budget by \$137,701. Several budget categories were also either over-spent or under-spent, including Consultants, Travel/Per Diem, Equipment, Supplies and Other Direct Costs.

B3. The above discrepancies were due in part to the fact that, during the period of the CS-VII grant, **PCI**'s financial monitoring system was not sophisticated enough to adequately track expenditures versus budgets. And the CS-VII grant was monitored as a single account, rather than by project site (Other CS-VII project sites--namely, Riau Province, Indonesia; Guatemala; Nicaragua; Bolivia and **PCI**/Headquarters--were also either over- or under-spent against their **USAID** and PC1 budgets.).

During 1994, PC1 has been extensively restructuring its financial system, under the leadership of a new Chief Financial Officer. PC1 has developed a financial reporting and analysis system which allows headquarters-based staff members to monitor revenue and expenditures for each project site and cost center, by means of monthly financial reports and reviews of revenue and expenditure statements against budgets. This new system should allow PC1 to closely monitor future grants, and avoid some of the problems mentioned above.

B4. When budgeting for a Child Survival project, it is important that all potential sources of revenue be included, and that project staff do not commit to activities that require resources not available to the project. In particular, some activities require unrestricted cash, while others can more readily be supported with in-kind inputs. Since **PVOs** are permitted to credit in-kind inputs toward the required 25% match, it should be expected that they will do so. And, in many cases, unrestricted cash resources will be contributed only when absolutely necessary, and only if available. Project managers must have a realistic expectation of how much cash they will receive, and should be prepared to reduce project objectives and cut back planned outputs if necessary.

### C. Lessons Learned

#### CI. STRENGTHENING COLD CHAIN AND IMMUNIZATION MANAGEMENT

Computerized PWS (LAM) software. Indonesia uses a Local Area Monitoring (LAM) scheme as a management tool in the immunization program. Based on the number of doses of vaccine given, health centers each month produce a series of bar graphs depicting in rank order the percentage of the annual target achieved by each village in their area. Thus sub-standard villages are graphically identified providing an opportunity for decision-making and targeting resources. At the next level, district EPI managers re-draw the same graphs according to health center performance. This data moves further up to the province and then eventually is reported to the national EPI office.

A complete report requires that separate graphs be produced for DPT-1, Polio-3, Measles, **TTI**, **TT2** and drop-out for DPT1-Polio3 and **TT1-2**. These seven graphs are all drawn by hand. Although the procedure is a helpful management exercise, the process is time-consuming and often suffers from mathematical errors. At the district level the monthly task consumes several days. Once the graphs are drawn they must be photocopied and sent on to the province by mail.

PC1 has computerized the LAM reporting with a program called **MANISE** (*Managemen Imunisusi Setempuit*, or Local Immunization Management) that facilitates data entry, calculations and printing of the graphs. The usual two-day chore at the district level takes less than one hour on the computer and graphs can be reproduced on the printer in minutes to provide extra copies for feedback to the field. Data is sent on a diskette to the province where another **MANISE** program compiles the data for a national EPI report. PC1 has helped to install the program in three districts and at the province MOH. It will be installed in the remaining two districts within the next few months.

The program is a money-saver for the MOH. What normally takes two whole days for the compilation of data and the drawing of graphs by hand is now accomplished in 40 minutes with the software. The added advantage is that the results are more accurate and they can be quickly relayed to the next level on the network by sending a diskette only. There is no further need to mail bulky hard copies that require expensive postage. The program is also very easy to use. It is written in

Indonesian using the **Foxpro** database program, and includes pull-down help menus. PCI has provided training in the use of the program to district and provincial personnel, who have been able to easily master it.

Midterm evaluation recommendation and subsequent actions taken:

- *PCI should assist the MOH in reviewing possible expansion of the model computerized PWS system, taking into account the given constraints, after a reasonable trial period.*

As mentioned above, **PCI** has installed the **MANISE** program in three district health offices as well as the provincial MOH, and will soon complete installation in the remaining two districts. Staff of these MOH offices were also given training in the program's use.

In addition, **PCI** recently presented the **MANISE** program at the annual EPI national meeting in Jakarta, where it was very well received. As a result of this exposure, and the desire of **EPI/Jakarta** to see other areas benefit from it, UNICEF has agreed to award **PCI** a grant to expand the program to all other provinces, and to write the national-level program. This expansion will be undertaken during CS-X.

The final evaluation **team** was impressed with the **MANISE** program, and its potential to streamline immunization data management and analysis from the district to the national level. The **team** also felt that the endorsement of the national MOH and UNICEF was a tribute to **PCI's** success in the development of effective and appropriate data management technologies.

Training in HIS and computers. By the end of May, **PCI** had provided more than 678 hours of computer training to six MOH and one **BangDes** staff member. Instruction included DOS, Word Perfect, Lotus, Harvard Graphics, **EpiInfo** and Professional File System programs, as well as the **MANISE** data monitoring program, as described above. This training should allow the staff of these counterpart institutions to improve their efficiency and better manage their programs in the future, assuming that plans are developed and resources committed to sustain these systems.

Cold chain survey and database. A survey of all 101 health centers conducting immunization activities throughout Maluku was conducted in early 1992. The survey included information on staff, transportation, cold-chain and immunization equipment, vaccine stock, immunizer training and knowledge about contra-indications for vaccine, plus village **Posyandu** implemented. The information was used to create an immunization program management and cold-chain database. The baseline survey revealed several problems that were amenable to improvement:

- There was a clear mal-distribution of physicians.
- Only 60% of the facilities were storing vaccine at the proper temperature (2° - 8° C).
- Only 44% of the facilities were monitoring the temperature daily as recommended by the MOH and WHO.
- There was a mal-distribution of transport vehicles.
- Most immunizers were not vaccinating children who had fever, diarrhea, or even a cold, resulting in an extraordinary number of potential missed opportunities.
- Expired vaccine was not being discarded.
- Vaccine stock books were not being routinely used.



Thus, although the presumption had been that most cold-chain problems were due to the difficult geographic situation, it became evident from this survey that many of the problems were due to lack of equipment/staff and deficiencies in vaccine management and immunizer knowledge. These latter could be corrected.

The results of the survey were reviewed at meetings of doctors and immunizers in all five districts. Letters of instruction were issued by the provincial MOH clarifying contra-indications for vaccine and the policies for vaccine storage and management. A copy of the database was established at the provincial MOH using PFS (Professional File System). With the establishment of semi-annual updating of the database, a regular pattern of supervisory visits by the district EPI officers was established. Over the ensuing two years the updated database was reviewed and presented to MOH at semi-annual meetings.

A cold chain follow-up survey was conducted in June 1994 and found significant improvement over the baseline levels for most indicators. For example, of 101 health centers, the number who stored vaccine within the correct temperature range rose from 60% to 86%. And the proportion of health centers recording the refrigerator temperature daily rose from 45% to 84%. Expired vaccine had almost disappeared. And immunizers demonstrated a marked improvement in their knowledge of contraindications, and by qualitative survey were less likely to withhold immunizing mildly sick children. The only indicator which fell was the number of health centers without transportation. These improvements were undoubtedly influenced by the attention the cold chain received through the survey and subsequent supervision.

To facilitate the on-going monitoring of the cold chain, PCI and the MOH/Maluku have simplified a cold chain checklist developed by the MOH/Jakarta, and are encouraging its use during regular semi-annual visits to the health centers. The check-list has been computerized using PFS for easy entry and ranking of health centers. The program will be installed on all the district computers as part of CS-X activities.

The evaluation team found, however, that the regular supervisory visits are not carried out in all districts, due to limitations of funds and staff time. A new policy of integrating EPI visits with supervision of other programs has been planned in some areas, which will help ease this problem. Preparations for this policy implementation have been made by the North Maluku district office, including briefing sessions each morning to educate staff about activities of other programs. The evaluation team felt that this model had promise, and should be considered by other districts as well.

Midterm evaluation recommendations and subsequent actions taken:

- ***PCI should discuss with the MOH possibilities for improving the use of Cold Chain Survey data for planning and budgeting.***

As mentioned above, the cold-chain survey data were used to establish a cold-chain management database, and a supervisory checklist was introduced to facilitate on-going monitoring and program improvement.

- ***In an effort to improve immunization program management, PCI should discuss with the MOH the implementation of increased, semi-annual, supervisory visits.***

PC1 demonstrated to the MOH that management of health centers improves when supervision is carried out regularly, and encouraged them to focus more effort on these visits.

- *PCI should assist the MOH in pursuing the possibility of using one combined, simplified checklist (PCI Cold Chain Survey + Supervisory Checklist).*

This checklist has been developed, based on a model used by the MOH/Jakarta. The checklist has also been computerized.

- *PCI should work with the MOH in reviewing the appropriateness of a computerized cold-chain data system, given the current resource constraints and the less than optimal use of the overall system.*

The new computerized database is being introduced at the provincial MOH, as an inventory tool. The computerized cold-chain checklist is being introduced at the district level, as a management tool.

Vaccinator training: and function. PCI introduced an on-the-job training program whereby the best vaccinators in each district provided on-site peer training sessions for other vaccinators who have not performed well. Eleven of these sessions have been held to date, each lasting five to ten days. As part of this program, PC1 was also instrumental in encouraging the MOH to circulate a letter to all health centers clarifying the proper procedures and contraindications for childhood immunization.

The evaluation team felt that the vaccinator peer training program is an effective vehicle for the transfer of knowledge and sharing of experience. Such on-site peer training is appropriate for vaccinators who have been working with EPI over a period on months but are exhibiting poor performance. However, it is not appropriate for newly recruited vaccinators, since the duration of the training is too short.

Results from the cold chain follow-up survey support the effectiveness of the program. For example, the proportion of vaccinators who know to give immunizations to children with fever rose from 22% to 72% during the program, thus contributing to a reduction in missed opportunities. All health centers that received an immunizer “consultant” visit have subsequently demonstrated significant improvement in coverage. The cost of the program is nominal at about \$50 per visit, and the MOH in Maluku has agreed to continue this program with their own funds beginning in 1994.

#### RECOMMENDATIONS:

1. PC1 project managers should collaborate with district health program managers in all areas, not only EPI.
2. The feasibility of using **TBA**s for gathering data on the presence of pregnant women in the community should be examined.
3. The feasibility of using **TBA**s for community-based surveillance of measles and acute flaccid paralysis (AFP) should be examined.

4. Use of the TBA birth reporting form should be reviewed and expanded to all **TBA**s. Untrained **TBA**s should be instructed on use of the form by village midwives.
5. It is important that PC1 encourage and assist the MOH and **BangDes** to develop plans, and make resource commitments, to maintain their computer equipment, up-grade software and provide refresher training to their staffs.

## C2. INCREASING **POSYANDU** IMPLEMENTATION

In Maluku PC1 has worked with the MOH to increase the number of **Posyandu** which are implemented each month, through the formation of multi-sectoral, provincial, district, sub-district and village **Posyandu** Management Teams (PMTs) which are responsible for monitoring monthly indicators of **Posyandu** function. It has been found that involving local government in **Posyandu** implementation and immunization program advocacy has been an effective means for increasing resource mobilization. This same strategy was used in achieving support for Indonesia's highly successful family planning program. The HIS developed within the framework of this PMT program provides the local government leaders with information each month on where **Posyandu** implementation is lacking in order to better target resources. It has been seen that the MOH alone cannot implement and, at the same time, promote the immunization program. Thus these multi-sectoral teams have proven to be an effective way of improving multisectoral and local government support for child survival activities.

The **Posyandu** monitoring data is compiled by the Head of Village Development for each sub-district using three indicators from the Immunization Local Area Monitoring system and one for **Posyandu** attendance. From the raw data, a score is calculated for each village and a ranking performed. The four lowest-ranked villages are reported to the sub-district governor who then is supposed to take action to ameliorate the situation of poor **Posyandu** implementation in those villages. The sub-district data is sent on up to the district level where it is compiled by the Head of Village Development, scored and the sub-district ranked. This delineates which sub-districts are having the greatest problems realizing **Posyandu** implementation.

Appropriate measures are then taken. This usually requires a visit to the poorly performing area. Before this HIS was developed the local government had no **definite** data on which areas needed attention, much less what steps to take.

Although **Posyandu** Management Teams were officially legislated by the national, provincial and district governments in 1990, no budget existed for PMT functioning in **Maluku**. In 1991 PC1 provided the funding to support the **PMTs** at the provincial, district and sub-district levels, which allowed the commencement of PMT program activities. The provincial and district governments have ensured the sustainability of the **Posyandu** Management Team scheme not only by officially decreeing its implementation, but also by making budgetary provisions in the province and three districts for the fiscal years of 1994-95. The remaining districts will soon follow.

PC1 developed the training curriculum for **PMTs**, provided funding for the training, and implemented a training-of-trainers (TOT) scheme to train the **PMTs**. Under this scheme, the provincial team was oriented first, followed by training of the district, sub-district, and finally the village teams. The

formation and training of village-level teams is not yet completed in some areas, but is planned to be finished under the new CS-X project.

PCI has facilitated the PMT's management role by introducing a simplified **Posyandu** indicator data collection, analysis and reporting system. The system, using a set of simple forms, assists in the identification of villages, sub-districts and districts needing increased attention. The team felt that it is a valuable tool in improving **Posyandu** implementation.

Management of the **Posyandu** has been institutionalized within the PMTs in some areas and should be sustainable. The seven sectors represented by the PMT members are now more aware of the function and importance of the **Posyandu**, and its role in human resource development. As a result of the PMT program, coordination between the MOH and **BangDes** seems to be improved in some areas. Meetings between the staffs of MOH and **BangDes** now occur more frequently, allowing for better sharing of information. In 1994 **BangDes** was made responsible for supervision of the **Posyandu**, and the district budget for **Posyandu** supervision was transferred from the MOH to **BangDes**. This development should ease the management burden on the health staff.

Another advantage of the PMT system is the involvement of the district and sub-district governors (**Bupatis** and **Camats**), who are influential in motivating PMT members and encouraging community mobilization to attend the **Posyandu**, through the respective village heads.

#### Midterm evaluation recommendations and subsequent actions taken:

##### **POSYANDU MANAGEMENT TEAMS -- GENERAL:**

- *PCI should discuss with the provincial PMT the importance of initiating the development of village level Posyandu Management Teams as they are the closest link to Posyandu implementation.*

As of June 1994, 38% of village teams had been formed and received their training. The remaining village PMTs will be trained under the CS-X extension. As a way to develop a sense of ownership and responsibility for the PMT's activities, the project has adopted a policy of training village PMTs only when their respective sub-district PMTs have submitted three consecutive month's of completed reports.

- *PCI should discuss with the teams the importance of fully integrating team activities, including supervisory visits, with on-going intersectoral activities.*

This is being practiced, at least with some PMTs. For example, during visits to district **BangDes** offices, the provincial **BangDes** representative--who is a member of the provincial PMT--also makes supervisory visits to the district PMTs.

- *PCI should discuss with the teams the importance of providing timely feedback (reporting) to team members following supervisory visits.*

This feedback has been sporadic among most PMTs--including provincial, district and sub-district--because of a lack of regularly-scheduled team meetings.

## PROVINCIAL PMTs:

- *PCI should discuss with the team the importance of meeting regularly for problem solving, and the possible option of having a core group meet every month with the full group meeting once per quarter.*

PC1 encouraged the provincial PMT to make such an arrangement, but was unsuccessful. Team meetings have been sporadic at best, and have not been given the necessary priority by the team members.

- *PCI should assist the provincial PMT in reviewing mechanisms for reducing time lag in providing feedback to the district level. Options for review might include:*
  - \* *having monthly rather than quarterly reviews of data for monitoring and feedback*
  - \* *defining a new method for quick data review and responsibility for reporting back to the district level;*
  - \* *utilizing PCI's computerized data analysis system.*

The scheduling of meetings--whether quarterly or monthly--is up to the provincial PMT itself, and it is unlikely they will choose to meet more frequently. PC1 developed a simplified **Posyandu** data collection and analysis system, as described above, but there has been little interest among **BangDes** staff to be trained in its use.

- *In order to enhance sustainability, PCI should discuss with the provincial team the possibility of sending a letter of decision to the district and sub-district levels instructing them to provide for the teams within their planning and budgets, especially for 1994/1995 and onwards.*

A letter of decision was not sent, but the district governments have provided funding for the PMTs, to allow them to make supervisory visits and to hold meetings.

- *The appropriateness of a computerized scoring system should be reviewed, given the current resource constraints and the less than optimal use of the overall system.*

The computerized system was reportedly not used much, and so there was no opportunity to assess its appropriateness.

## DISTRICT PMTs:

- *In order to reduce the time lag in monitoring, PCI should discuss with the district PMT the possibility of using available data, e.g. PWS and nutrition data, to calculate the scores and produce recommended forms.*

This is being done to some extent, but problems have arisen. Data forms A and B are not being used in some areas, and thus the data needed to monitor **Posyandu** in those areas are incomplete.

- *PCI should review with the district PMTs different methods for improving and evaluating sub-district activities, such as visiting only the weakest sub-districts or using regular meetings to review problems.*

Monitoring of sub-district PMTs has been organized so that only the lowest-scoring sub-districts are visited by the district PMTs. This method saves money and focuses assistance where it is needed most.

- *PCI should discuss with the provincial PMT possibilities for re-instructing district PMTs on the use of the reporting system based on PCI/MOH forms A and B.*

This recommendation was discussed with members of the provincial PMT, who suggested instituting an annual refresher training in Ambon for district PMT members. Due to the high cost of this scheme, however, PCI decided instead to review the reporting system with district **BangDes** personnel individually whenever PCI staff visit a district headquarters.

#### SUB-DISTRICT PMTs:

- *PCI should re-inform the sub-district PMTs about their initial support for meetings.*

This recommendation was not acted upon, because PCI did not want to encourage the sub-district PMTs to become dependent on PCI funds for conducting their meetings.

- *PCI should discuss with the sub-district PMTs different methods for improving and evaluating activities in the field, such as visiting only the weakest villages or using regular meetings between village and sub-district officials to review problems.*

These methods have been discussed with the sub-district PMTs, and a strategy of focusing supervisory attention on the weakest villages has been adopted.

Some weaknesses of the PMT system, in its present state of development, include the following:

- While the evaluation team felt that the TOT training scheme is an efficient means of reaching large numbers of PMTs, and serves to increase the training skills of PMT members at the provincial, district and sub-district levels, the team felt, that data tabulation and analysis skills development was probably given insufficient emphasis during the training. It was clear that these skills, necessary for implementing the PMT indicator monitoring system, are not strong in several sub-districts.
- Some team members also do not clearly understand their PMT responsibilities; job descriptions have been prepared, but have not yet been adequately adopted at all lower levels.
- In some districts, the **BangDes** PMT secretary felt that his workload was too great, and hinders his ability to tabulate the **Posyandu** indicator data.
- **Posyandu** indicators measure only immunization and **Posyandu** attendance (growth monitoring), but ignore MCH, FP and CDD components.
- Some sub-district PMTs are not providing complete information to the district PMT regarding the reasons for low village performance of **Posyandu** coverage. In fact, some sub-district PMTs did not send any information to the district PMT. To compensate for this deficiency,

the district health staff must provide the missing information to the district PMT, especially the EPI coverage data.

#### RECOMMENDATIONS:

6. Continue village level PMT training.
7. Refresher training should be provided to **PMTs** at each level, to improve their skills in using indicator information for integrated planning and intervention.
8. A provincial meeting should be held to assess the status of the PMT system, and to make recommendations about the roles of the teams at each level, and the use of the reporting system
9. Revise **Posyandu** indicators, to reduce the number of EPI indicators and add indicators for MCH, FP and CDD.
10. Job descriptions should be revised and clarified for PMT members.

#### **C3. INCREASING COMMUNITY PARTICIPATION (Social Marketing)**

School **Posyandu** program (PPAS)<sup>2</sup>. The PPAS program is an innovative method of delivering health information to mothers, as well as encouraging their attendance at **Posyandu**, through a child-to-mother strategy. Based on two pilot projects in Maluku and Sumatra, it has been found that elementary school students can be used as advocates for the **Posyandu**. PC1 in partnership with the Ministry of Education has developed a curriculum and trained 4th and 5th grade physical education teachers to use it in remote villages where multi-media campaigns cannot reach. The 16-week curriculum requires students to complete homework assignments with their mothers in specially designed workbooks. Homework also includes the completion of four “mini-surveys” in the neighborhood covering **Posyandu** attendance, immunization coverage, breast feeding and diarrhea management. This provides a previously untapped conduit for maternal health education. The incorporation of a contest format with points awarded for attendance of registered children at the **Posyandu** provides substantial incentive for student participation in the program.

The evaluation team was very impressed with the PPAS program, and felt that it holds great promise for improving community health knowledge and increasing attendance at the **Posyandu**. Evaluation with pre- and post-testing of randomly-selected mothers and examination of health center records have demonstrated dramatic increases in the proportion of children with Road-to-Health cards, **Posyandu** attendance, and immunization coverage in ten pilot villages in Maluku. Some of the positive effects of the program which the team noted were the following:

- By motivating mothers, the trained students helped increased **Posyandu** attendance in the PPAS areas. During the four months before the program started, the average attendance was only 33%. Following the PPAS program, the average attendance rose to 77%.

---

<sup>2</sup>*Program Posyandu Anak Sekolah*

- The program increased mothers' knowledge of health issues, as measured before and after the PPAS. For example, the proportion of mothers who knew that 'IT protects both the mother and the newborn from tetanus rose from 6% before the program to 58% afterwards. And the complete immunization coverage for children of these mothers rose from 33% to 81%.
- Participating students have gained an appreciation for the *Posyandu*, and will be more likely to attend throughout their lives. They also gained experience conducting survey interviews.
- Strong support from private sector was obtained, as the Unilever company donated prizes for high-scoring students and schools.

At present the program is only a pilot scheme, but it will be expanded under the new CS-X project to encompass 625 schools and reach more than 50,000 mothers. The Ministry of Education in Maluku has sanctioned the inclusion of this program into the formal 4th grade teaching curriculum. Participating teachers will receive "credit points" toward professional advancement and future promotions.

Local funding for the program has been identified, through the intersectoral dues of the members of the provincial social marketing committee. The cost to replicate the PPAS in each school is estimated at approximately **Rp75,000** (US \$30) per year, with recurrent costs consisting of the provision of student workbooks, at seventy-five cents each. Prizes (soap, toothpaste, shampoo, margarine) for the contest format have been provided as a promotion by P.T. Unilever. Encouragingly, UNICEF is currently promoting the School *Posyandu* Program with the National Ministry of Education in an effort to realize expansion of this program to other provinces.

Radio *Posyandu* quiz. Beginning in June 1993, PCI and the Ambon municipality introduced a radio quiz show, in which *Posyandu kaders* form teams and compete for prizes by answering questions related to various maternal and child health topics. The quiz shows are held monthly and are broadcast throughout the province. As of April 1994, the Ambon municipality assumed full responsibility for funding and running the shows.

The evaluation team felt that the radio *Posyandu* quiz shows are a powerful means of delivering health education messages to a very wide audience, and that the shows were very well organized and most of the questions were appropriate for the general public. It was also very encouraging to note that Sempati Airlines and the P.T. Unilever company will continue to donate prizes to be awarded to high-scoring teams. The government radio station, RRI, is also contributing by donating staff time and broadcasting services.

Newspaper crossword puzzles. The "Voice of Maluku" newspaper has cooperated with the project by publishing crossword puzzles every two weeks. These puzzles are designed by PCI and the MOH/Jakarta, and the answers address various *Posyandu* and health topics. Respondents send in completed puzzles, and the correct puzzles are drawn by lottery and prizes awarded.

Although the evaluation team did not have the opportunity to directly review the results of the crossword puzzle program, we felt that the concept of using the newspaper to deliver health messages in such a creative way is strong.



Religious leaders. Another innovative approach to delivering health education implemented by PC1 is the involvement of local religious leaders (both Muslim and Christian). These leaders, representing 600 churches and 120 mosques, have included PC1 health messages in their weekly sermons (khotbah) to their congregations.

**Powandu** promotion by TBAs. An important role of the trained **TBAs** is the promotion of the services of the *Posyandu*, and encouraging the mothers they assist to attend the *Posyandu* regularly. They also now distribute RTH cards and **TT** cards to mothers, which also encourage **Posyandu** attendance. **TBAs** interviewed by the evaluation team reported that they either accompany mothers to the *Posyandu* or encourage them to attend, to receive further antenatal care services including **TT**, as well as child health services after delivery. Some **TBAs** also now **serve** as **Posyandu kaders**, further increasing the linkage between mothers and the health services.

#### RECOMMENDATIONS:

11. Replicate PPAS in all schools in Maluku Province, starting with less-developed villages and those lacking easy access to mass media.
12. **PCI** should encourage the school health supervisory team to incorporate the PPAS within its responsibilities, at the provincial, district and sub-district levels.
13. PC1 should work with the school health supervisory team to encourage the provincial MOE to include funds in its budget to support the replication of the PPAS program.

#### C4. TBA SERVICES TO MOTHERS

TBA training. **TBAs** received a seven-day training course to upgrade their skills in delivery and to prepare them to assume greater responsibility for health education and **Posyandu** promotion. The training course employed an adult education methodology, including the use of demonstration, discussion, practice, and role plays. The **TBA** training is conducted by health center midwives, who themselves have received training from district midwives, through a TOT scheme. The TOT scheme involves health workers at several levels, and the evaluation team felt that it was more efficient than a centralized training scheme.

The **TBA** training was assessed using a pre-test and post-test evaluation, and was found to be very effective. For example, the proportion of **TBAs** who knew the correct number of **TT** injections needed to protect from tetanus rose from 55% before the training to 98% afterwards. Likewise, the proportion of **TBAs** knowing that a pregnant woman should be examined during her first trimester rose from 68% to 81%; and the proportion knowing that at least four such examinations are needed rose from 63% to 78%.

Safe delivery. The central role of the **TBAs** is assisting mothers with a clean, safe delivery. An important part of this service is the use of aseptic technique (the “three cleans”--developed by WHO and introduced by the MOH) adopted by PC1 for project.

As a measure of this, the project’s final survey found that among mothers delivered by PCI-trained **TBAs**, 82% stated that the TBA used scissors to cut the cord, as opposed to 51% of all **TBAs**

(trained and untrained). In addition, 79% of PCI-trained TBAs used proper cord care, as opposed to 58% for all TBAs.

Identification. When interviewed by the evaluation team, PCI-trained TBAs were generally able to list the signs and symptoms for high-risk pregnancy, and knew to refer these women to the health center for care.

Reporting to health center. TBAs are provided with a supply of pictorial birth reporting forms, which they are trained to complete and submit to the health center for each baby they deliver. The form, which was originally developed by the MOH, has been revised and simplified by PCI for use by the TBAs.

Through interviewing the TBAs, the team found that they understand and are generally able to use the form. The TBAs themselves indicated, during the TBA post-test survey, that their reporting to the health centers increased. According to the survey, TBA reporting to the health center rose from 46% before training to 96% after six months; and written reporting rose from 20% to 71%.

However, some TBAs have not completely filled in the forms, especially the sections inquiring about the health status of the infant at one month, and whether the mother was given a RTH card.

Furthermore, in some areas where monthly meetings of TBAs and midwives are not conducted regularly, submission of the reporting forms is not routine.

Distribution of RTH and TT cards. Although TBAs are instructed to distribute RTH and TT cards, in some areas the health center staff is reluctant to allow TBAs to distribute the cards, for fear they will lose them.

Midterm evaluation recommendations and subsequent actions taken:

- *In areas where meetings are not yet occurring, PCI should discuss with the MOH the importance of using regular monthly meetings of TBAs and midwives for discussion of problematic issues and refresher training. Guidelines could be developed for covering the necessary topics during these refresher training sessions.*

PCI staff have discussed the idea of monthly meetings with TBAs, and claim that in most areas TBAs are already holding these meetings. No formal discussion guidelines have been developed. Instead, the format used is generally question and answer, covering problems encountered in providing services and using the reporting form.

- *PCI should use TBA post-training test results to determine the causes of the perceived problems and weaknesses. These results should be used to make appropriate modifications in the training program.*

Results from the TBA phase I training post test showed no deficiencies in the training course. As a result, the post test for the phase II training was canceled. However, as a result of TBA feedback that the practice of immediate breastfeeding after birth was low, the phase II training was modified to place greater emphasis on teaching mothers the importance of this practice.

- *To improve monitoring, PCI should include the exact date of birth on their TBA Birth Reporting Form.*

This recommendation was not carried out because PC1 staff felt that it would be too difficult for illiterate TBAs to record exact dates.

#### RECOMMENDATIONS:

14. Training should be extended to all TBAs in the province.
15. Health center staff should be encouraged to assist with the RTH and TT card distribution through the TBAs.
16. TBAs should be provided with a metal container for use in sterilizing the scissors.
17. All TBA training should be conducted using a TOT adult education methodology (PC1 model), rather than direct pedagogical training from the province to the sub-district level.

#### **C5. INNOVATIONS AND PILOT PROJECTS**

Vitamin A distribution by TBAs. PC1 implemented a pilot project in which 430 TBAs were trained to distribute high-dose vitamin A capsules. They were supplied with 5-10 capsules each, as well as stickers to use in marking the reporting form when a capsule was given to a post-partum woman.

To evaluate the pilot program, TBAs were given a pre-test before the training and a post-test was administered three to seven months after the training. Results of the evaluation indicate that the TBAs' knowledge increased substantially. For example, the proportion of TBAs knowing that vitamin A is used for vision rose from 31% to 75%, while those not knowing its usefulness fell from 55% to 12%. Similarly, the proportion of TBAs knowing that newly-delivered women can receive vitamin A capsules rose from 18% to 97%; and the proportion knowing that children aged 1-5 can receive a capsule rose from 20% to 68%.

#### Midterm evaluation recommendations and subsequent actions taken:

- *PCI should discuss with the MOH the possibility of expanding the pilot project using TBAs as Vitamin A distributors if it is seen to be successful after a reasonable trial period. The possibility of using TBAs to distribute iron tablets to post-partum women, in support of the national program, should also be discussed.*

The MOH has approved the plan to use TBAs for these micronutrient distribution schemes. Under the CS-X extension, TBAs will receive refresher training which will include preparation for distributing vitamin A and iron tablets.

TT5x uroeram and cards distribution. The expanded 'IT pilot program was designed to examine if the number of TT doses given would increase if 'IT immunization were expanded to all women of reproductive age, instead of only to pregnant women. After six months of activity, data was collected

and projections were made for a one-year period. It was found that the number of doses given in the Ambon municipality after one year (approximately 24,000) would be four times the number given if the program were restricted only to pregnant women (approximately 6,470). Thus a four-fold increase in **TT** immunization could be achieved if the program were expanded.

An accelerated school-based **TT** immunization program is planned to start in July 1994 in all schools in the Ambon municipality, to be followed by all schools in the province. The program will aim to deliver five 'IT vaccinations to each schoolgirl between the first and ninth grades.

Projections based on the full implementation of these expanded **TT** programs suggest that by the year 2000 at the latest, more than 90% of women between five and 40 years of age will have received five **TT** vaccinations, effectively eliminating neonatal tetanus from Maluku Province.

PCI has printed 100,000 **TT5** cards to date, of which 71,000 had been distributed to the districts by the end of May 1994. An indication of wider support for the program is the fact that the MOH/Jakarta EPI section has printed 40,000 of the cards. Further, UNICEF/Indonesia has committed to printing 42 million cards for distribution throughout the country starting in 1995.

Recently, further evidence of increased awareness of the importance of **TT** immunization was demonstrated when the wife of the Mayor of Ambon decided to make **TT** vaccination a requirement for entrants into the 1994 Miss Ambon beauty contest, held on June 14. 'IT vaccinations were available to all 450 contestants at the time of the contest. In another event, the wives of naval officers (Yalasenastri) were given **TT** vaccination during their convention on June 16.

Midterm evaluation recommendations and subsequent actions taken:

- ***PCI should assist the MOH in reviewing the possible expansion of the **TTWRA** system as well as the lifetime **TT** history card after a reasonable trial period.***

The **TTWRA** system and use of the lifetime **TT** card have been introduced in all districts. They are not yet used in all health centers and **Posyandu**, but the usage has expanded greatly over the past year.

- ***PCI should discuss with the MOH possibilities of improving the implementation of the **TTWRA** program. Possibilities could include sending a second governmental letter of decision to reinforce key aspects of the project including an explanation of the optimal vaccination schedule.***

The letter of decision was sent to all districts except SE Maluku and Central Hahnahera, although the information was informally shared with them as well. All districts are now implementing the **TTWRA** program, and it has also been introduced into the schools, as mentioned above.

- ***PCI should discuss with the MOH the possibilities for better utilizing regular meetings of service providers at the district and sub-district levels to further discuss the details of the program.***

This plan is being carried out, with quarterly meetings at the districts and monthly meetings at the Ambon Municipality.

Tetanus surveillance. Elimination of neonatal tetanus, however, requires a surveillance program. Currently most cases of NNT reported come from hospitals. The majority of cases are not reported since villagers expect, almost routinely, that a certain proportion of newborns will expire each year. PCI has developed a community-based surveillance system using trained traditional birth attendants (TBAs). The TBAs report births and deaths with a simple pictorial reporting form. Newborns who die in the first month of life are reported to the health center where the midwife is obliged to make a **village** visit to actively trace the cause of death through interviews. If a case is found, the health center authorities will summon all the village women to attend two mass **TT** immunization sessions. The TBA reporting form and scheme has been endorsed by the provincial MOH for all future TBA training and development. The reporting form costs less than 90 cents per hundred.

Midterm evaluation recommendations and subsequent actions taken:

- ***PCI should discuss with the MOH options for reinforcing the appropriate use of the TBA reporting form and the NT surveillance form.***

Health center midwives have been instructed to give more attention to **TBAs** who do not complete the reporting form correctly. This effort seems to have had mixed results. Also, a new, simplified NT tracing form has been developed and distributed to all health centers. The previous tracing form was quite complicated, and only a few midwives were using it.

- ***PCI should discuss with the MOH the possibility of using routine supervisory visits to monitor the NT surveillance system.***

PCI staff have discussed and emphasized this issue with their MOH counterparts, although no information was available about the extent to which the recommendation was implemented.

The final evaluation team observed that a substantial number of **TBAs** were not completing the section of the reporting form used to indicate infant deaths possibly due to neonatal tetanus. This surveillance method seems not to be completely understood by many **TBAs**. This is partly due to the health center midwives not always giving feedback when the **TBAs** submit the reporting forms.

Project management and coordination. The evaluation team was impressed with PCI's use of a management-by-objectives system, in which project activities are listed on a central board and individual staff members are assigned responsibility for carrying out the duties. By the use of such an open system, staff members are motivated to be vigilant in following through on their duties. After observing PCI's management-by-objectives system, the N. Maluku district health services office was motivated to adopt a similar system, including a daily listing of activities and assignment of staff responsibility.

Local staff development. PCI has made great efforts to develop the skills of its local staff members. Most have received computer training, and are able to use several software packages. All staff members have attended and made presentations at International PVO networking conferences held periodically in Indonesia. And several staff members have attended training courses covering topics including social marketing and focus group discussions. In addition, study tours have been conducted, whereby staff visit other projects to learn from their experiences. Finally, PCI has introduced an

internship program to provide skills to volunteer office assistants. Currently there are two such assistants.

With increased ability has also come increased responsibility, as several staff members have been promoted. The former office boy now functions as the health information system coordinator; a secretary has been promoted to IEC coordinator; and a project manager has been promoted to senior project manager. These staff members seem to be flourishing in their new responsibilities.

#### RECOMMENDATIONS:

18. Vitamin A distribution by **TBA**s should be incorporated into any future TBA training.
19. PC1 should encourage the MOH to adopt a management-by-objective system similar to its own.

#### C6. CONCLUSIONS

- PCI's support in the areas of management, new technologies and innovations has assisted in the achievement of child survival goals.
- PC1 supported the increase of EPI coverage and *Posyandu* attendance in Maluku province.
- PC1 introduced several innovative activities such as: PPAS; peer vaccinator training; adult education method for TBA training; and simplified *Posyandu* indicators for follow-up action.
- PC1 encouraged the local MOH to intensify the supervision and dissemination of information activities.

#### C7. GENERAL RECOMMENDATIONS

1. PC1 should encourage the provincial MOH to accelerate child survival activities in Maluku, starting with increasing accessibility through comprehensive and integrated planning of several activities using various sources of funds and donor agencies.
2. Financial support can be obtained from the provincial government budget (APBD-1) by submitting a fully-supported operation plan based on a reliable information system.
3. The local MOH should adopt PCI's management process to be utilized for strengthening the capacity of program managers in the lower levels.
4. Institutionalization of the feasible innovations should be legitimated by political support from the local government through financial and legal support, such as for **TT5x** and **PPAS**.

## II. PROJECT SUSTAINABILITY

### A. Community Participation

#### A1. COMMUNITY MEMBERS AND LEADERS INTERVIEWED

##### Tobelo Sub-district, North Maluku District:

Mr. Arief, Sub-district Head

TBAs, Tobelo

**PKK** member

**BangDes** member

##### Tidore Sub-district, Central Halmahera District:

TBAs, Tomalouw village

**Posyandu kaders**, Toloa village

TBAs, Toloa village

##### Rutong & Hutumuri villages, Ambon Island:

Mr. D. Siahaya, Sub-district education officer

Mrs. M. Latuheru, school headmaster

Mr. A. Talahan, school teacher

Elementary school students

Parents of students

**Posyandu kaders**, Rutong village

##### West Seram Sub-district, Central Maluku District:

TBAs, Piru village

Mr. L.A. Alidin, Sub-district head

Mr. Ahmed Bidawi, **BangDes** member

Ministry of Religion representative

**PKK** member

##### Salahutu Sub-district, Ambon Island:

Mr. Harum, Tengah-Tengah village head

Mr. Manvapiny, **BangDes** member

Mrs. Walay, **PKK** member

Mr. Sulaiman Salampessy, head of Office of Religion

Mr. J. Matulessy, head of Office of Education

A2. Both elementary school teachers and parents of school children expressed their satisfaction with the PPAS program and what PC1 has done to create awareness among students and families of the importance of certain health behaviors and the services provided by the **Posyandu**.

A3. In an effort to build local capacity to deliver and sustain health services, three areas of project emphasis directly targeted community members. First, the improvement of **Posyandu** implementation was a central focus of the project. This included the training of **PMTs** at several administrative levels to monitor and address problems and deficiencies with the **Posyandu**.

Secondly, the training of **TBA**s was also a core of the project. The **TBA**s, who are resident in the community and respected and patronized by community members, were given training in improved birthing techniques, referral of high-risk pregnancies, data collection and methods for educating the community about child survival interventions. (Section IC4 provides more detail on TBA training.)

Finally, the social marketing component, especially the School **Posyandu** pilot program, was designed to test an innovative means for influencing local health behavior. **The** school **Posyandu** program trained local elementary school teachers to educate their students about important health issues, and to pass this information onto their mothers, as well as to promote their attendance at the **Posyandu**. Once trained, these teachers can sustain the effort by continuing this instruction during each school term. (Section IC3 provides more detail on the school **Posyandu** program.)

A4. The project was designed by PCI, in close collaboration with the Maluku MOH and the district health offices. It was based on the design of PCI's previous CS-IV project in Riau Province. Community members in Maluku were not involved, per se, in the project design.

The implementation of project activities depended heavily on community members who were identified and trained. A total of 1,485 **TBA**s were trained during the project, and have been providing antenatal, birthing and referral services to village mothers.

Village-level **PMTs** (including village leaders, **Posyandu kaders** and others) were trained to promote and **oversee** the **Posyandu** in their respective villages, as described in section IC2.

Finally, school teachers and students in 10 communities have helped to educate mothers and promote the **Posyandu** through the School **Posyandu** program.

Many community members were interviewed as part of the final evaluation exercise, as listed in section IIA1 above, as well as during the midterm evaluation. They were not involved in designing or carrying out the evaluation itself, but their participation was certainly essential to its success.

A5. In the context of this Child Survival project, health committees consisted of the **Posyandu** Management Teams (**PMTs**) which were established at the provincial, district, sub-district and village levels, and provincial and municipal social marketing sub-committees. (Section IC2 describes the **PMTs** in detail.) There is one provincial team, five district teams (including the Ambon Municipality); 56 sub-district teams, and 899 village teams to date (August 31, 1994). The formation and training of village **PMTs** was not completed during the CS-VII project, due to unforeseen delays. However, this activity will be finished early in the CS-X project with funds from the Australian International Development Assistance Bureau (AIDAB).

Members of the provincial, district and sub-district **PMTs** are drawn from various development sectors of the government, and as such are representative of those sectors which have an interest in rural development and health. They are not, strictly speaking, representative of the communities in which project activities are being implemented. The village teams, however, are more representative of the local communities, and include members drawn from the women's family welfare organization (PKK), **Posyandu kaders** and the village heads.



A6. As described in section IL47 below, the most significant issue being addressed by the **PMTs** at all levels is the functioning of the **Posyandu** within their respective areas. Ensuring the existence and quality of the monthly **Posyandu** is the reason the **PMTs** were formed and trained, and is their principal activity. As community residents, the members of the village **PMTs** are also involved in mobilizing members of their communities to attend the **Posyandu** more regularly.

In addition to **Posyandu** monitoring, the provincial PMT has also been involved in **Posyandu** promotion, by supervising the monthly **Posyandu** radio quiz program, which is broadcast by the Radio of the Republic of Indonesia (RRI). They have also provided financial support for the development of the radio episodes.

A7. The **PMTs** are responsible for monitoring the implementation of the **Posyandu** in their respective areas. This is accomplished through the collection of data on **Posyandu** functioning. Three monitoring forms were developed for this purpose, which assign a score for each of four indicators, including attendance at **Posyandu** and coverage of eligible children with DPT-1, Polio-3 and measles. These data are collected monthly at the **Posyandu** by a health center staff member, and are recorded on the monitoring forms by a member of the sub-district PMT.

Using the scores reported on the forms, each sub-district PMT is responsible for monitoring the **Posyandu** occurring within its sub-district. The scores are ranked in order of performance. Those **Posyandu** scoring the lowest for a given month are identified, and the sub-district PMT attempts to determine the reasons for the poor performance and to mobilize additional resources, if necessary, to address the problem. This process typically involves a visit to the village PMT responsible for the respective **Posyandu**.

In a similar way, the district **PMTs** monitor the **Posyandu** scores for each sub-district within their respective districts. And in turn, the provincial PMT monitors the activity of each of the five project districts. At the provincial and district levels, this process has been facilitated by the introduction of a computerized data monitoring system, developed by PC1 (see section IC1).

A8. The community resources contributed to the project have predominantly taken the form of individual time and effort. For example, trained **TBAs** are village residents who provide antenatal, delivery and referral services for free or at low cost to village mothers. Members of village **PMTs** and the women's family welfare organization (PKK) volunteer to promote and oversee the **Posyandu** sessions. And **Posyandu kaders** volunteer their time, in some cases for several years, for **Posyandu** promotion and health education provision. In addition, some villages have rewarded the **Posyandu kaders** by giving them attractive uniforms.

A9. The **PMTs** devote a considerable amount of time to the monitoring and promotion of the **Posyandu**. Those PMT members interviewed during the final evaluation seemed to care about the health of their communities and were committed to the improvement of the **Posyandu**. In some areas the **Camats** and **Bupatis** also play a part by encouraging their respective **PMTs** to be more active. On the other hand, some PMT members do not clearly understand their responsibilities and the role they can play in improving the **Posyandu**.

The training provided to the PMT members on the function of the **Posyandu**, the roles and responsibilities of the **PMTs**, and use of the simplified **Posyandu** indicator monitoring system has

enabled most **PMTs** to play an important role in **Posyandu** improvement. One PMT function identified as needing further attention is the tabulation and analysis of indicator data. Some PMT members are not currently able to perform this function.

As of 1994, the district budgets for **Posyandu** monitoring have been allocated to **BangDes** in three districts, with plans to do the same in the remaining districts in 1995. The amount of funds available for this activity is approximately US\$ 4,600 for North Maluku and US\$ 3,550 for the Ambon municipality per annum.

## B. Ability and Willingness of Counterpart Institutions to Sustain Activities

### BI. MEMBERS OF COUNTERPART INSTITUTIONS INTERVIEWED

#### Provincial Ministry of Health, Ambon:

Dr. A.R. Polanunu, Head of MOH for Maluku Province  
Mr. H.A Rivai, Head of Health Improvement and Disease Prevention  
Dr. I. Umarella, Head of Provincial Health Services Department  
Dr. Ristiano Sugiono, Head of Communicable Disease Control

#### Provincial PMT:

Mr. Sohilayat, Provincial I.G.; acting head of PMT  
Mr. Yopi Patty, **BangDes**  
Dr. Ristiano Sugiono, Head of Communicable Disease Control  
Mrs. Rukia, **PKK**  
Dr. Manuputty, Health Education

#### North Maluku District:

Dr. Syatif Albaar, Head of District Health Office; district PMT member  
Mr. Alwi, Head of District EPI; PMT member  
Mr. Pura, **BangDes**, PMT member  
Mr. Adam Malik, **BangDes**, PMT member  
Mrs. Ati, **PKK**, PMT member

#### Tobelo Sub-district:

Mr. Arief, Sub-district Head; PMT member  
Dr. Ali Albaar, health center doctor; PMT member  
Health center midwife; PMT member  
**BangDes** representative to PMT  
**PKK** representative to PMT

#### Central Halmahera District:

Dr. Abubakar Yusuf, Head of Health Services; PMT member  
Mrs Alwiyah, Head of Immunization; **PMT** member  
Mr. Hasyim Salampessy, District Secretary of **BangDes**; PMT member

#### Tidore Sub-district:

Dr. David Kaunang, health center doctor; PMT member  
Mrs. Zena Mohammed Aly, health center midwife; PMT member  
Other sub-district PMT members

Rutong & Hutumuri villages, Ambon Island:

Mrs. C. Saiya, Hutumuri health center nurse

Mr. Daniel Salakori, Hutumuri health center vaccinator

West Seram Sub-district, Central Maluku District:

Mr. L.A Alidin, Sub-district head; PMT member

Mr. **Ahmed** Bidawi, **BangDes**; PMT member

Ministry of Religion representative to PMT

**PKK** representative to PMT

Dr. Fonny Leatemala, head of Piru health center

Dr. Daivye Bitjoli, doctor, Piru health center

Mrs. Christina Melsasail, head midwife, Piru health center

Mr. Freddy Laturette, **immunizer**, Piru health center

Salahutu Sub-district, Ambon Island:

Mr. Musaad, PMT member

Mr. Marwapiny, **BangDes**; PMT member

Mrs. Walay, **PKK**; PMT member

Mr. Sulaiman Salampeasy, head of Office of Religion; PMT member

Mr. J. Matulessy, head of Office of Education; PMT member

Dr. L. Aitonam, health center doctor, Suli

Dr. Pouton, health center doctor, Tulehu

Ambon Municipality:

Dr. H.J. Huliselan, Head of Health Services; member PMT social marketing team

Mr. C. Noiya, RRI; member PMT social marketing team

**BangDes** representative to PMT social marketing team

**BKKBN** representative to PMT social marketing team

B2. From its inception, the Maluku CS-VII project has been considered a partnership, and was implemented jointly by PCI and the Ministry of Health. The Ministry of Health includes the provincial MOH, district health offices and local health centers (**Puskesmas**) throughout Maluku province. **PCI's** role was to facilitate project activities through training, system design and development, technical assistance, financial support, as well as providing the initiative and momentum to make things happen.

The Ministry of Education, including local school teachers and headmasters, also collaborated with PCI in implementing the School **Posyandu** Program (see section IC3).

The provincial PMT also served as a counterpart institution to PCI, and has been responsible for supervising the functioning of the district, sub-district and village **PMTs**, as described in section IC2. In addition, the Village Development Office (**BangDes**) at the provincial, district and sub-district levels, collaborated with the project, and assigned its local representatives to serve on the **PMTs** and coordinate **Posyandu** indicator data tabulation and analysis. Beginning in 1994, **BangDes** has assumed responsibility for the district PMT budgets.

Finally, several other organizations provided assistance to the project's social marketing component. The provincial newspaper, the "Voice of Maluku", published crossword puzzles, articles and advertisements focusing on health themes related to Child Survival. And the radio **Posyandu** quiz

shows were broadcast by the Radio of the Republic of Indonesia (RRI), and quiz prizes were donated by P.T. Unilever and Sempati Airlines. (See section IC3 for more information on the social marketing program.)

B3. The counterparts mentioned above are expected to continue their support of project activities, at least through the three years of the CS-X extension. This includes the MOH at all levels; the Ministry of Education, teachers and headmasters; the Village Development Office (**BangDes**) at the provincial, district and sub-district levels; and supporters of the social marketing programs: the “Voice of Maluku” newspaper, RRI, P.T. Unilever and Sempati Airlines. All of these organizations have expressed their confidence in the project’s management, and their willingness to continue working collaboratively.

B4. The principal counterpart institution, the Ministry of Health, has been very supportive of **PCI’s** activities, and has generally been pleased with the results of the CS-VII project. The MOH has endorsed the new CS-X extension project, which will continue and expand upon the activities of the last three years. Accomplishments such as the Lifetime **TT** card and the expanded ‘IT immunization policy have helped to establish Maluku Province as a leader in introducing innovative health strategies in Indonesia.

B5. The training of counterpart personnel and local health workers has been the backbone of the Maluku CS-VII project. To increase the efficiency of this training, a training of trainers (TOT) methodology was used wherever feasible. The project initially trained 10 district-level midwives as master trainers. With these senior midwives it then trained 86 local health center (**Puskesmas**) midwives to serve as trainers of **TBA’s**, and subsequently assisted these local midwives in carrying out TBA training sessions, in which 1,485 **TBA’s** were trained. Through this activity, the midwives acquired valuable experience, including adult education training techniques and supervision skills.

Training for trainers was also provided to provincial, district and sub-district PMT members, to strengthen their ability to train lower-level PMT members within their respective areas. As with the TBA training, **PC1** subsequently collaborated with the PMT members in conducting the training sessions.

**As** described in section **IC1**, the project developed an immunizer peer training program which pairs successful immunizers with poorly performing immunizers from other areas, in an effort to pass on valuable pointers and demonstrate techniques for more effective program management. This program has led to significant improvements in immunization coverage at very low cost. The MOH has agreed to continue this program with their own funds beginning in 1994.

To facilitate the compilation and analysis of immunization data, **PC1** developed a computerized “local immunization management” (**MANISE**) computer program, and trained MOH staff at the provincial and district levels in its use. The program, which is very simple to use and is written in Indonesian, allows MOH managers to tabulate immunization data, display it in graphical form, and consolidate it into provincial reports. The software has been installed at the provincial MOH and three district health offices; and, under CS-X, it will cover the remaining two districts, and be introduced into the rest of the provinces of Indonesia. In addition to the **MANISE** program, **PC1** has trained MOH and **BangDes** staff to operate DOS, Word Perfect, Lotus, Harvard Graphics, **EpiInfo** and PFS software (See section **IC1**).

As mentioned in section IC3, PC1 has trained 4th and 5th grade teachers in an innovative curriculum focusing on health education and the promotion of the Posyandu (PPAS). These teachers in turn lead their students through the 16-week curriculum, with the help of a teacher's manual, student workbooks and participatory teaching methodologies. Once trained, these teachers can continue to present the PPAS lessons to students in future years, with minimal recurrent costs.

Finally, PC1 has encouraged the **PCI/Maluku** local staff to establish an independent NGO, capable of continuing to design and manage community-based health programs after PCI's involvement in Maluku province has ended. As a result, **Lembaga Pembangunan Partisipasi Masyarakat (LPPM)** an indigenous NGO composed of members of the Maluku staff, has been formed. During the three years of CS-X, **LPPM** will assume increasing responsibility for project management activities, and will become fully independent in 1997. As described in section IC5, the local staff of **PCI/LPPM** have already received substantial training in the areas of computer applications, budgeting, management-by-objective, operations research and public presentation of research results.

B6. The extension project in Maluku (CS-X) has just begun, and will continue until September 1997. During this time, PC1 will devote considerable attention to preparing the various counterpart institutions—including the MOH, **BangDes**, the MOE, the **PMTs** and private sector collaborators—to assume full responsibility for sustaining effective project activities into the future. Because of the CS-VII and CS-X project designs, and the collaborative method of project implementation which PC1 has adopted, much has already been done to prepare for this sustainability, as described in section IIB2. At this writing, however, it would be premature to draw conclusions about what resource constraints the counterparts may face in two to three years.

B7. See section IIB4.

B8. "Major project responsibilities", in the context of PCI's Maluku CS-VII project, have primarily included training, system design and development, technical assistance and financial support, as mentioned above. PC1 will continue to perform these roles during the CS-X extension, but will reduce its involvement toward the end of this period.

B9. Ministry of Health staff members, at the provincial, district and sub-district levels, received training and worked closely with **PCI** on the project. The salaries of these staff members were covered by the MOH, and will continue to be covered during CS-X and beyond.

The MOH also agreed to pay for the immunizer peer training program—at \$50 per 10-day visit—beginning in 1994. And the MOH budget supported the functioning of the **PMTs** at the provincial level and in three districts until mid-1994. From that point on, budgetary support for the **PMTs** has been taken over by **BangDes**, with the remaining two districts also to be covered.

The Ministry of Education has agreed to support the recurrent costs of the school **Posyandu** (PPAS) program, which consist of the procurement of student workbooks (at 75 cents each).

A corporate sponsor (P.T. Unilever) has also agreed to support the PPAS program, as well as the radio quiz shows, and has donated prizes valued at **US\$ 970—including** soap, toothpaste, shampoo and margarine—for the contest portion of the programs.

The Radio of the Republic of Indonesia (RRI) has donated broadcast time for the **Posyandu** quiz shows, valued at US\$ 1,647, and has now taken over responsibility for designing and airing the monthly shows, independent of the Child Survival project. **RRI** plans to air **Posyandu** quiz shows staged by two additional district PMTs--Central Maluku and North Maluku--in 1995. Likewise, the "Voice of Maluku" has donated print space, valued at US\$ 146 per month, to publish newspaper **Posyandu** quizzes and advertisements.

**B10.** The MOH is the principal implementing agency for the health services targeted by this Child Survival project. It is their program, in their province; and they bear the overall responsibility for improving health services and status in Maluku. **PC1** merely assists them in this effort. Their motivation for keeping commitments to the project is simply an extension of their mission as a public health department. The **MOH's** support of training programs also serves to build the capability of their staff and enhance their professional status.

The radio **Posyandu** quiz shows have proven to be very popular in Maluku, and have probably drawn listeners to the RRI station--although no marketing data is available regarding this issue. Further, the cost to **RRI** of donating air time for these monthly episodes is negligible. Similarly, the cost to the "Voice of Maluku" of a small area of donated print space is insubstantial, and the newspaper gains goodwill by providing a public service.

As for P.T. Unilever, through the social marketing program the company is able to distribute its products--again, at very low cost to itself--to a potential market of school students and their families throughout the province. The company also receives valuable promotion opportunities, by having its logo included in project literature and during media events.

**B11.** **PC1** consulted with the Maluku Ministry of Health in the design of the midterm and final evaluations, and many MOH staff were interviewed during the evaluations. A provincial **BangDes** coordinator also accompanied the final evaluation team during part of the evaluation exercise. The final evaluation team included an officer of the Directorate General for Community Health, of the national MOH; and an EPI officer from UNICEF/Indonesia. The final project survey was conducted by **PCI** with assistance from the Ministry of Health. Provincial MOH officials participated in the cluster selection process and added several additional questions to the questionnaire. And health center staff accompanied each cluster survey team during the field work. The midterm evaluation team included the same national MOH officer; and a representative from PATH, a US-based PVO. Results of the final evaluation were presented to a gathering of provincial MOH officials and staff in Ambon, Maluku.

### **C.     Attempts to Increase Efficiency**

**C1.** The nature of the Maluku project's design was perhaps the most powerful factor contributing to efficiency. The project catchment area consisted of the entire province of Maluku, with a total population of approximately two million. With such a large population base, **PCI** was able to propose a three-year CS-X extension project in Maluku with a cost-per-beneficiary ratio of only \$0.63 per year. In addition to this context, however, **PC1** adopted several strategies which helped to reduce costs for the project:

- The project collaborated with the private sector, media organizations, religious groups and other health development organizations to support the social marketing program, and thus reduce the investment PC1 needed to make in these activities. Contributions such as free air time and print space, donated prizes (including soap, toothpaste, shampoo and margarine), weekly health education “sermons” and cash have greatly assisted the project.
- Working closely with Ministry of Health personnel, PC1 implemented a training of trainers methodology utilizing existing local health staff and PMT members to train **TBA**s. This method was more cost-effective, as well as sustainable, than having PC1 staff conduct all the training.
- With the exception of the Project Director (who carries other responsibilities as PCI’s Asia Regional Technical Advisor), all **PCI/Maluku** staff members are Indonesian citizens, and thus cost the project less money than posting expensive expatriates.
- The introduction of the computerized PWS monitoring system was a money-saver for the MOH. What normally takes two whole days for the compilation of data and the drawing of graphs by hand is now accomplished in 40 minutes with the software. The added advantage is that the results are more accurate and they can be quickly relayed to the next level on the network by sending a diskette only. There is no further need to mail bulky hard copies that require expensive postage.

C2. The above strategies were successful for several reasons:

- Local businesses, media houses, and churches and mosques recognized the value of PCI’s health education programs, and PCI’s strong reputation in Maluku Province, and were motivated to lend their support.
- PC1 enjoys a close working relationship with the Ministry of Health at all levels, which has made it possible to coordinate with them on many activities, and to share costs.
- Fortunately, Indonesia possesses a wealth of talented and experienced health and development professionals, and **PCI** was able to select highly qualified local staff for the Maluku Child Survival project.
- The introduction of the computerized PWS monitoring system was possible because the MOH had already established an immunization indicator monitoring system, albeit cumbersome and incompletely implemented. The new computerized system was a natural improvement. In addition, the MOH made a commitment to upgrading its monitoring technology by installing computers, and was eager for its staff to be trained by PCI.

c3. It is important for the PVO to collaborate to the greatest extent possible with local institutions such as the Ministry of Health, **NGOs** and private enterprises. This strategy not only increases efficiency but also improves project sustainability.

#### D. Cost Recovery Attempts

D1-D5. The Maluku CS-VII project did not include cost-recovery mechanisms.

#### E. Household Income Generation

E1. The project's household income generation activities were minimal, and focused on the traditional birth attendants. As part of their regular monthly supervision meetings in each sub-district, the TBAs were encouraged to conduct lottery sessions (*Arisan*), in which each TBA contributed a fixed amount of money and lots were drawn to determine which TBA received the pot for that month. This scheme has proven popular as a way to raise small amounts of capital, which the TBAs can use to start a small enterprise or to buy necessities.

Further, many TBAs claimed that the training they received through the project has increased their status and the demand for their services in the community, and, concomitantly, the compensation they receive from mothers they help. The project's final survey found that 62% of PCI-trained TBAs received more than Rp10,000 for assisting a delivery, compared to only 46% for all TBAs. The TBAs made it clear, however, that their primary motivation was to be of service to mothers, rather than any fee they might earn.

E2-E3. No data were available on the amount of income generated by the *Arisan* scheme, or as a result of TBA training, nor on the proportion of project costs this income represented. Increased TBA compensation undoubtedly helped those TBAs to "meet the cost of their health activities."

E4. The simple lesson from PCI's limited income generation experience in CS-VII is that increasing a health workers skills and status not only improves the quality of her work, but also can increase the demand for her services and the income she can earn.

#### F. Other

F1 & F3. Because the Maluku project was conceived as a partnership between PC1 and the MOH and other counterparts, many of the project's activities were designed and carried out with sustainability in mind. These activities include:

- TBA training. The training of TBAs has been a central part of the project, and will contribute to the sustainability of rural health service delivery in Maluku. TBAs provide antenatal and delivery care to mothers in their villages, as well as dispensing health education messages and motivating mothers to take their children under five to the *Posyandu*. TBAs are respected and patronized in many villages. A total of **1,485 TBAs** were trained during the project.
- TBA TOT. The project trained district-level and health center midwives to serve as TBA trainers. A total of 96 midwives received the TOT training. These midwives then trained selected TBAs in their respective sub-districts, with assistance from PC1 staff. The TBA TOT capability has now been established in Maluku province, making it more likely that further TBAs will be trained in the future.
- School *Posyandu* (PPAS) Program. The PPAS program has trained 4th and 5th grade school teachers in an innovative, school-based *Posyandu* education pilot scheme that has been implemented in 10 schools, reaching 649 students thus far. Once trained, teachers can continue to educate future classes using the PPAS curriculum. This pilot program will be expanded to all sub-districts under CS-X



- Other social marketing. **The Posyandu** Radio Quiz program was created by PCI, and quiz episodes are broadcast by the Radio of the Republic of Indonesia (RRI) every month. During the CS-VII project, 15 **Posyandu** radio quiz shows were produced and broadcast throughout the province. In April 1994, the Ambon municipality assumed full responsibility for running the radio quiz shows, and requires no further assistance from PCI in this regard. The municipality plans to continue producing and broadcasting the quiz shows indefinitely. Likewise, the newspaper crossword puzzles and advertisements should continue to appear, with PCI and the MOH designing them and the "Voice of Maluku publishing them gratis. (See sections IC1, IC3 and IC4 for more detail on these activities.)

F2. The Maluku CS-VII DIP presents nine indicators to be used to track progress toward sustainability. These indicators, and the progress made toward reaching them, are as follows:

1. ***"Quarterly reports generated by MOH from cold-chain data base in their computer system."***

Instead of utilizing the computerized cold-chain database, the MOH opted for a simplified version which is being expanded under CS-X as a computerized supervision checklist.

2. ***"Quarterly reports generated by MOH/Maluku giving feed-back to district3 on immunization coverage and Posyandu implementation status based on computerized HIS."***

A provincial **BangDes** official completed computer training in the **Posyandu** indicators in August, 1994. She is responsible for generating the feedback reports on a quarterly basis, and should begin doing so immediately. Two semi-annual reports were generated in 1994. The introduction of the computerized HIS is not yet completed, however. At the time of the evaluation, three of five districts had installed computers, with the others awaiting the CS-X project.

3. ***"Regular monthly Local Area Monitoring reports from 80% of the health centers."***

As of the final cold-chain survey in June, 1994, 80% (94 of 117) of health centers were submitting monthly reports.

4. ***"Designation of representative from the National Posyandu Management Team (PMT) responsible for Maluku."***

A national representative was designated.

5. ***"Issuance of governmental letters of decision for the formation and function of Posyandu Management Teams from provincial to village levels."***

These letters have been issued, and **PMTs** have been formed and trained at the provincial, district and sub-district levels. The formation and training of village-level **PMTs** was begun under the CS-VII project, and will be completed under CS-X.

6. ***"Regular monthly Posyandu indicator reports from 8090 of the sub-district PMTs."***

As of this writing, 45% (150 of 336) of the sub-district *Posyandu* Management Teams had submitted at least three *Posyandu* indicator reports during the previous six months.

7. ***“Regular quarterly Posyandu indicator reports from 100% of district Posyandu Management Teams.”***

As of this writing, 70% (17 of 20) of the quarterly reports from the five district *Posyandu* Management Teams had been submitted during the previous four quarters.

8. ***“Official allocation of funds for Posyandu Management Team activities in 1993-94 Maluku provincial and district budgets.”***

Budgetary provisions have already been realized in the province and three districts for the fiscal years of 1994-95. The remaining districts are expected to follow.

9. ***“Completion of training for 1,500 TBAs with demonstration in post-tests that knowledge was significantly enhanced.”***

The CS-VII project trained a total of 1,485 TBAs, in all 56 sub-districts. As described in section IC4, evaluation of the training program demonstrated a substantial increase in TBA knowledge.

Sustainability-promoting activities which were unplanned in the original project design include the radio *Posyandu* quiz shows and the newspaper promotions. These were also some of the more successful programs implemented. The school *Posyandu* program (PPAS) was conceived as a pilot scheme, and, due to its great promise, will be expanded throughout the province under CS-X.

### III. EVALUATION TEAM

- A1. The final evaluation team included the following members:

Dr. Partohoedoyo Soetaryo, Chief, Sub-Directorate of Integrated Health Service Development, Directorate General of Community Medicine, MOH/Jakarta

Dr. Wibowo, Assistant Project Officer, Elimination of Neonatal Tetanus, UNICEF Indonesia

Mr. Jeffrey Billings, Technical Support Officer, Project Concern International/San Diego

- A2. All team members participated equally in the preparation of the final evaluation report. The draft report was written by Jeffrey Billings and circulated to the other team members for comment and editing. Their comments were then incorporated into the final draft of the report.

## **APPENDIX 1**

### **FINAL PIPELINE ANALYSIS**

CS VII - Maluku Pipeline  
09/01/91-09/30/94  
Grant #PDC-0500-A-00-1042-00

	ACTUAL EXPENDITURES TO DATE (09/01/91-09/30/94)			TOTAL BUDGET (09/01/91-09/30/94)			REMAINING OBLIGATED FUNDS		
	AID	PCI	TOTAL	AID	PCI	TOTAL	AID	PCI	TOTAL
Salaries & Benefits	242,643	224,317	466,960	225,512	44,120	269,632	(17,131)	(180,197)	(197,328)
Consultants	6,976	0	6,976	46,605	13,181	59,786	39,629	13,181	52,810
Travel/Per Diem	171,581	26,018	197,599	263,171	25,128	288,299	91,590	(890)	90,700
Equipment	10,760	14,429	25,189	0	34,147	34,147	(10,760)	19,718	8,958
Supplies	11,623	12,955	24,578	0	29,386	29,386	(11,623)	16,431	4,808
Other Direct Costs	87,407	15,198	102,605	29,479	51,960	81,439	(57,928)	36,762	(21,166)
In-Direct Costs	154,013	87,553	241,566	150,284	44,847	195,131	(3,729)	(42,706)	(46,435)
Total Expenses	685,003	380,470	1,065,473	715,051	242,769	957,820	30,048	(137,701)	(107,653)

**FINAL SURVEY REPORT**

# PROJECT CONCERN INTERNATIONAL

---

## FINAL SURVEY REPORT

May, 1994

CHILD SURVIVAL VII:  
Improving Immunization Coverage and Village Health Post  
(*Posyandu*) Implementation

MALUKU PROVINCE, INDONESIA

September 1, 1991 • September 30, 1994

***Implemented by:***

Project Concern International  
and  
Ministry of Health, Maluku

***Project Director:***

J. Stephen Robinson, MD, PhD, MPH

## TABLE OF CONTENTS

<b>Table of contents</b> .....	i
<b>EXECUTIVE SUMMARY</b> .....	1
<b>I. INTRODUCTION</b> .....	3
<b>II. METHODOLOGY</b> .....	7
a. Survey Preparation and Personnel .....	7
b. Sample Size .....	7
c. Cluster Determination Strategy .....	8
d. Training .....	9
e. Field Methods and Interviews .....	10
f. Analysis .....	10
<b>III. SURVEY RESULTS</b> .....	11
A. Demography.....	11
B. Maternal Care and Practices .....	11
C. Delivery Knowledge and Practices .....	12
D. Maternal Tetanus Toxoid Immunization .....	15
E. Posyandu Activities & Child Immunization Coverage ...	17
F. Diarrheal Disease .....	18
<b>IV. DISCUSSION OF RESULTS</b> .....	22
A. Demography .....	22
B. Maternal Care and Knowledge .....	23
C. Delivery Knowledge and Practice .....	24
D. Maternal Tetanus Toxoid Immunization .....	26
E. Posyandu Activity and Child Immunization Coverage ...	27
F. Diarrheal Disease Management .....	29
<b>V. FEEDBACK</b> .....	33

<b>APPENDIXES</b> .....	
Appendix A. MAP OF MALUKU .....	34
Appendix B. MAP OF PHASES .....	35
Appendix C. QUESTIONNAIRE .....	36
Appendix D. CLUSTERLIST .....	37
Appendix E. COMPARISON OF BASELINE AND FINAL RESULTS .....	48



## EXECUTIVE SUMMARY

This report provides the results and analysis of a FINAL health and immunization coverage survey conducted by Project Concern International/Indonesia in the Province of Maluku, Indonesia. It covers 56 sub-districts in a province with a population of 1,940,000 people.

The survey was conducted to derive data following the implementation of a USAID-funded Child Survival VII project designated for the period from September, 1991 to August, 1994. The information was needed to evaluate the health development situation for comparison with the baseline survey results collected in November, 1991 and September, 1992. The results of those surveys have been combined into a population-weighted manner to facilitate the comparison.

Using a 30-cluster random sampling technique 240 mothers with a child less than two years of age were interviewed between May 2 - 21, 1994. It was found that:

1. Sixty percent (60%) of the 12-23 month-olds had received all their immunizations before 12 months of age (compared to 45% in the baseline).
2. Twenty-three percent (23%) of the women who had delivered in the previous twenty-three (23) months had proof of complete tetanus toxoid immunization (compared to 16% baseline).
3. Amongst the survey population 68% of the children possessed Road-to-Health Cards (KMS) (baseline = 49%). Of these 29% had attended the Posyandu weighing session six times consecutively in the previous six months (November - April, 1994) compared to the baseline of 11%. Average attendance over six months rose from 33% to 48%.
4. About two-thirds of the births were assisted by a Traditional Birth Attendant (TBA). The proportion trained (46%) did not rise significantly since the 1,485 newly trained TBAs had not had enough time to impact on births in the previous year.
5. Amongst 20% of children who had had diarrhea in the previous two weeks, 50% had been given Oral Rehydration Solution (Oralit or SSS) at home (baseline = 28%). Those given more or the same amount as usual of liquids rose from 60 to 82% and for solids from 48 to 78%. However, only 41% knew at least one danger sign of dehydration signalling the need to take the child to a health facility (baseline = 37%). Oralit, the packaged ORS, was found available in only 20% of the households surveyed (baseline = 13%).

Neither religious affiliation nor literacy seemed to have any correlation with the data results. Trained **TBAs** were more likely to use scissors to cut the umbilical cord, less likely to use traditional medicine to treat it, and more likely to receive higher compensation for their services than untrained **TBAs**.

## BASELINE SURVEY REPORT

### I. Introduction

Health is an important aspect of a satisfying life style, but in Maluku Province in eastern Indonesia community health still needs considerable attention. Maluku is a vast archipelagic area consisting of more than a thousand large and small islands. Because of this situation Maluku Province experiences many problems especially in transportation and communication resulting in areas that are still very isolated.

Consistent with the government's priorities in community health development efforts and a request from the Director General for Community Health in the Ministry of Health (MOH), Project Concern International in Indonesia (PCI/I) agreed to assist the health development efforts of Maluku Province. With the approval and collaboration between the Kanwil/Dinas Health offices in Maluku and PCI/I this health development project known as Child Survival VII (CSVII) was implemented with funding from USAID/Washington between September, 1991 and August, 1994.

Geouranhic. The Province of Maluku (or The Moluccas) is located in eastern Indonesia and consists of more than 1,000 islands (See Map in Appendix A). Located between the large island of Sulawesi and the western end of Irian Jaya (formerly Dutch New Guinea), extending from 3 degrees North latitude to 9 degrees South latitude, it consists of four *kabupatens* (districts) and one *kotamadya* (municipality) divided into 56 *kecamatan*s (sub-districts) with 1,518 villages and hamlets. Maluku covers an earth surface area of 851,000 square kilometers (equal to the area of Pakistan) with a land mass of only 10% of this area. Maluku is comprised of mostly hilly and mountainous land (57%) with a very low percentage of lowland (15%) and undulated land (28%). The area is mostly of volcanic and coral origin with several active volcanoes and mountains ranging up to 3,000 meters in height.

The total population of Maluku is 1,904,000 (projected from 1990 National Census) of whom 40% are under the age of 15 years and 14% are under the age of 5 years. The population density of Maluku is extremely low, averaging about 17 **persons/km<sup>2</sup>**, not including the capital city of Ambon which has a population of about 275,000. In Maluku the number of families per village averages about 200. Like much of Indonesia, most of the population of Maluku (81%) live in rural areas. About 70% of the villages are located more than 10 km away from the nearest *Puskesmas* (Community Health Center); and 65% cannot be reached by wheeled vehicles.

There are 133 indigenous languages spoken in Maluku. Unlike the rest of Indonesia between 50-60% of the people are Christian, the rest being Moslem or animistic. The major products are fish, timber, pearls and spices (cloves, nutmeg, and cinnamon).

Problems. From 1991-93 the Moluccas had the lowest immunization coverage in Indonesia. One quarter of the population endured a measles coverage of <10%. Only 49% of children under two were found to have Road-to-Health cards and only 13% of women had proof of complete tetanus toxoid coverage in their last pregnancy. These deficiencies were primarily due to the difficulties encountered by the MOH in providing services to a geographically isolated populace spread over an area equal to 10% of the surface area of all of Indonesia.

PC1 has been implementing Child Survival programs in Indonesia since 1984 starting in SE Sulawesi, concurrently with Riau (Sumatra) (1989-1994) and then Maluku, beginning in 1991. The Maluku project worked with the MOH to increase immunization coverage for women and children using three strategies: **(1) Strengthening the cold-chain and immunization program management:** From the findings of a cold-chain and immunization program survey conducted by PC1 of 101 health centers, information was made available to the MOH about the strengths and weaknesses of the program. Recommendations were made for steps to be taken to correct and improve immunization management and cold-chain integrity. A computerized database was developed and shared with the MOH. This database included an inventory of facilities, cold-chain equipment, transport, staff, and village coverage. Provincial and District MOH staff have been instructed in the use of this database. The data has been updated as supervisory visits are conducted, so that improvements can be assessed.

**(2) Increasing the implementation of the Posyandu:** By Ministry of Home Affairs decree each Province has been instructed to increase Posyandu (**Pos Pelayanan Terpadu**) implementation through the formation of multi-sectoral Posyandu Supervisory Teams from provincial to village level. It has been found in other provinces that the participation of local government (especially the **camat** and **kepala desa**) in Posyandu implementation is a key to its success. Of particular importance is the development and use of a monitoring scheme for Posyandu implementation. This has been institutionalized using components of the immunization local area monitoring system and a measure of attendance. Essentially it is a data-based management system. Using the Posyandu indicators in a simple scoring system local government officials can see the areas that need attention and assistance and can better target their resources to improving the overall level of health status in their areas. Supervision and feed-back from above is an important component of this program.

**(3) Increasing community participation in the Posyandu through training of 1,485 TBA motivators and an innovative social marketing program.** PC1 has had significant positive experience with **utilizing trained TBAs to motivate mothers** to attend Posyandu. In addition to instruction in improved delivery technique and providing a TBA kit, **TBAs** also learned to recognize high-risk pregnancies, teach mothers about immunizations and the use of

Oralit for diarrhea. The duties of the TBA is enhanced by the introduction of RTH card and Vitamin A distribution to the mothers at birth. Furthermore, **TBAs** are key in neonatal tetanus surveillance using Pictorial Birth Recording forms. Coupled with increased midwife training and supervision capabilities, a closer link has been forged between the health center and the village.

PC1 has also supported the formation of Social Marketing **Committees** within the *Posyandu* Management Teams to promote the development of a social marketing program for *Posyandu* attendance and immunizations:

- (i) Mass media - monthly radio quiz show, newspaper quizzes, crossword puzzles, banners, and "bumper stickers" for bicycle rickshaws

- (ii) Development of health education **messages** delivered weekly in 600 churches and 110 mosques

- (iii) **TBAs** distribute Road-to-Health cards and TT cards to promote immunizations

- (iv) School *Posyandu* program utilizing elementary school students to instruct their mothers and neighbors on the importance of attending the *Posyandu*.

**PCI's** program assisted Maluku to achieve Universal Childhood Immunization in April, 1994. In addition, the project initiated two immunization strategies that are becoming national policy: 1) Use of a Life-time TT card, and 2) TT immunizations available to all women of childbearing age. A project-designed computer program for monitoring and reporting immunization program results (**MANISE**) is being expanded nationally in 1995.

A three-year extension (CS-X) was awarded to enable PC1 to build on the progress achieved in CS VII. Even with improved *Posyandu* implementation (72 to 92%) and increased attendance (from 30 to 48%), still more than 150 villages have not yet formed a *Posyandu* nor trained cadres to implement them. Thus cadre-training is being conducted for new *Posyandu* and in existing *Posyandu* with inadequate staffing. Successful pilot projects in vitamin A distribution and social marketing of the *Posyandu* are being expanded.

The goal of the final survey was to obtain data to compare to the baseline survey data conducted in November, 1991 (Phase I) and September, 1992 (Phase II) in order to assess how well the project achieved its objectives.

The survey was conducted in April, 1994 and covered all of the province of Maluku which is comprised of five districts and 56 sub-districts. The Phase I Baseline Survey was implemented from October 29th to November 19th, 1991 and covered the 32 sub-districts most easily reached (74% of the population). The Phase II baseline survey was completed 10 months later covering the remaining 24 sub-districts that are considered very difficult to reach with services. The ten months separating the two surveys was not deemed significant as far as results since the Phase II area is so isolated and poorly developed (see Map of Maluku Phases in Appendix B).

The survey sought information such as immunization coverage for children, tetanus toxoid immunization status of women during pregnancy, maternal pre- and peri-natal health care practices, Maternal Child Health services (*Posyandu*) and knowledge/practice regarding the home management of childhood diarrhea.

### **Project Objectives:**

The survey was used to obtain information for the following objectives:

1. Increase to 65% the proportion of children between 12-23 months of age who are fully immunized by 12 months of age (80 % using PWS<sup>1</sup> monitoring).
2. Increase to 45% the proportion of mothers of children under two years of age whose most recent delivery was fully protected from tetanus (60 % using PWS monitoring).
3. Increase to 65% the proportion of children under two who possess a Road-to-Health card.
4. Increase to 45% the average proportion of children under two who attend the Posyandu per month.
5. Increase to 40% of proportion of mothers of children under two with episodes of diarrhea occurring during the last two weeks treated with ORS (Oralit or SSS).
6. Increase to 50% the proportion of mothers of children under two who know how to properly provide Oral Rehydration Therapy

---

<sup>1</sup> PWS is an abbreviation for the Indonesian phrase *Pemantauan Wilayah Setempat*, or Local Area Monitoring. Based on the number of doses of vaccine given, health centers each month produce a series of bar graphs depicting in rank order the percentage of the annual target achieved by each village in the area. It is primarily an immunization monitoring tool reflecting the approximate coverage of children under one year of age.

(ORT) to their child with episodes of diarrhea during the last two weeks.

7. Increase to 25% the proportion of mothers who have at least one packet of **Oralit** in the home.
8. Increase to 65% the proportion of pregnant women who deliver assisted by a trained TBA out of all the women assisted by **TBAs**.

## II. **Methodology**

### **a) Survey Preparation and Personnel**

The survey questionnaire was the same used for the baseline survey. It had already been pre-tested in the field in order to ensure that the questions were appropriately worded for the needs of the survey. The questionnaire was pre-tested in almost one hundred interviews and modified accordingly in the course of development. The final product took about 20 minutes to administer (see Appendix C for Survey form).

### **b) Sample size**

For this survey the WHO cluster sampling method was used, whereby the sample population is assigned to a number of groups or "clusters". The clusters sampled were chosen on the basis of random selection.

The determination of the minimal sample size is dependent on the confidence level and the degree of variance (in this case 10%). This means that if the survey reveals a 50% coverage of the population, the true result lies between **40-60%**.

A confidence level of 95% means that if the survey was repeated 100 times, the degree of variance in the results obtained would be within the 10% range mentioned 95 times out of 100.

The means by which the sample size is determined so that the population surveyed is representative of the total population in the survey area is shown in the following equations:

$$S.E. = \frac{\sqrt{pq}}{n}$$

$$S.E. = \frac{\text{Degrees of reliability}}{Z_{95\%}}$$

The value of Z for the 95% confidence level = 1.96  
 p = Probability of finding fully immunized children

$$p = 50\% = 0.5 \quad q = (1 - p) = (1 - .5) = 0.5$$

Thus,

$$SE = \frac{10\%}{1,96} = \frac{0,1}{1,96} = 0,05$$

$$0,05 = \frac{\sqrt{0,5 \times 0,5}}{n}$$

$$0,0025 = \frac{0,25}{n}$$

$$25n = 2,500$$

$$n = 100$$

If p = 50%, q = 50%, the minimal sample size is increased when the confidence level and degrees of reliability are equal. The formulation of sample size is determined on a cluster basis, and so designed as to avoid bias as a result of design effect and the differences in infant distribution in each cluster. Therefore, sample size is calculated in a "double-sampling\*" manner. So, a minimal sample size of 2 x 100 = 200 respondents is required.

In order that a representative sample size for each cluster may be obtained, a minimum of seven mothers and children per cluster are required, In this study, eight respondents per cluster were sought in order to improve the accuracy of the survey. This strategy also increased the likelihood of finding enough 12-23 month olds for the immunization coverage.

### c) Cluster Determination Strategy

The survey was carried out in all 56 Sub-districts (*kecamatan*) which formed the project area.

- (a) First, a sampling frame, consisting of a list of all the villages or communities in the sampling area was drawn up. This list showed the population per village and the cumulative population.
- (b) The Sampling Interval was determined by dividing the total population by 30 i.e. the number of clusters.
- (c) A random number was selected which is less than or equal to the Sampling Interval (59,258).



- (d) When the random number was selected, the cumulative population was examined to determine in which village/community it lay. This village was thus designated as Cluster I.
- (e) The next cluster site was determined by adding the Cluster I value to the Sampling Interval. The village/community in which the resultant value lay was designated as Cluster II.

The figure of 20,207 for cluster I was found using the Epi Stat computer program to select a value between 1 and 53,258 (the sampling interval). In the following example (See following page), the first cluster chosen was Gamsungi village in the Tobelo Sub-District. Then the cluster value was added to the sampling interval, and thus Cluster II was determined by the addition of  $20,207 + 59,258 = 79,465$ . This value lay in the village of Upt Biang in the Kao Sub-District. This system of adding the sampling interval to the previous cluster value was continued until thirty (30) clusters were obtained (Appendix D).

#### d) Training

Seven survey teams were formed each consisting of:

- One (1) senior/newly graduated university students with previous PC1 field survey experience
- One (1) PC1 staff member, accompanied by
- One (1) Health Center staff member (usually the vaccinator) and also one (1) village representative.

A female interviewer was used for each team. Before these seven teams were formed, a one-day refresher training was conducted for the team members at the PCI/Ambon office. This included two days practical training in the field in two nearby kelurahan (communities) according to the WHO methodology. Training and materials were provided by the PC1 Country Director and staff. The composition of the teams were finalized only after the training **was** completed. Seven students judged to be the best were selected from 10 trained candidates. The remaining three served as alternates. Permission for conducting the survey was obtained from the Provincial Head of Sospol (*Sosial Politik*) and transmitted to local government in all the kabupaten (districts) and kecamatan (sub-districts) involved. In addition, letters were issued from the Head of Health Services to Health Center staff in the areas to be surveyed.

## **e) Field Methods and Interviews**

This survey was carried out on a house to house basis. In order to determine the first household to be approached (i.e. Starting Point) a location in front of the village assembly hall was chosen. Here, a member of the survey team spun a bottle, the direction in which it pointed, having come to rest, being the direction in which the team initially proceeded. In order to select a specific house that lay in this direction, the last digit from the serial number of a randomly selected bank note was used. For example, a bank note may have the serial number VFG456625. In this case the last digit i.e. 5, determines that the fifth house lying in the previously chosen direction will be the starting point. In the event of the last digit being greater than the total number of houses lying in that direction then the second to last digit of the bank note was used. In selecting the starting point those houses that lay outside the village or neighborhood (if in an urban area) were ignored as they did not constitute part of the chosen cluster. In cases where the clusters were in a large town or community that contained distinct neighborhoods, the above random selection method using a bank note was also used to select the relevant area in which to begin surveying.

When the first household was chosen, it was initially determined if there was a child below two years of age in the household, and if the mother was present at the time. If so, the mother was interviewed. In cases where there was not a child below two years of age in the household, or the mother of an eligible child was not present, another household was sought. This was done by selecting the house whose front door was nearest the front door of the first house. Again the family of this house was approached to determine if there was a child in the household who came within the scope of this survey, and so on, until eight mothers had been interviewed in that cluster.

On arrival at the designated **cluster** village or community, each team met with the Health Center Head and Village Chief to explain the purpose of the survey and obtain staff to accompany them and assist during the survey interviews.

## **f) Analysis of Survey Data**

Epi Info 5.1, created by WHO and the Centers for Disease Control in Atlanta, Georgia, was used for the preparation of the survey format and the analysis of the data using statistics, cross-tabulations, and graphics.

### III. Survey Results

Main points are presented below. Results are summarized for all questions in Appendix C.

#### A. Demography

A total of 240 mothers with children below the age of 24 months, were interviewed in the course of this survey. Results indicate a relatively even breakdown of respondents in terms of mothers' religion, gender and age of child (Table 1).

TABLE 1  
POPULATION **DEMOGRAPHY**

No .	C a t e g o r y		T o t a l	Percentage
1.	Mothers religion	Christian	89	37 %
		Islamic	151	63 %
		T O T A L	240	100 %
2.	Gender of child	Male	113	47 %
		Female	127	53 %
		T O T A L	240	100 %
3.	Age of child (months)	0 - 11	122	51 %
		12 - 23	118	49 %
		T O T A L	240	100 %

#### Final Survey Results

In relation to educational achievement, 9% of mothers had received no schooling or were illiterate (did not complete third grade). It was also found that only 9% of respondents worked outside the home. Only 5% of all mothers had regular salaried positions (mainly as government employees).

#### B. Maternal Care and Knowledge

A total of 12 (5%) respondents indicated that they were pregnant at the time of interview. Most respondents indicated that on becoming aware of being pregnant, an expectant mother should attend a health specialist. A total of 121 (50%) respondents indicated that first attendance should occur during the first three

months of pregnancy, 57 (24%) indicated first attendance should occur between the fourth and sixth month, and 23 (10%) indicated that first attendance should occur between the seventh and ninth month. A further 15 (6%) respondents indicated that they did not think it necessary for an expectant mother to attend a health specialist, while another 24 (10%) did not know or could not remember. Three-quarters admitted to being examined at a health facility during their last pregnancy, most more than twice.

In relation to nutritional practices during pregnancy, 110 (46%) respondents stated that they consumed the same quantity of food as usual. A total of 92 (38%) mothers indicated that they consumed more than normal, whereas 38 (16%) indicated that they consumed less than normal.

When mothers were asked what foods they should eat during their pregnancy to prevent anemia, a total of 163 respondents (68%) stated green, leafy vegetables and 29% mentioned high protein foods such as eggs, fish, or meat. One-quarter did not know.

### C. Delivery Knowledge and Practices

The majority of children covered by this survey were delivered with the assistance of a midwife or traditional birth attendant (TBA) (see Table 2).

**TABLE 2**  
**DELIVERY PRACTICES**

No.	C a t e g o r y	T o t a l	Percentage
1.	T B A	154 §	64%
2.	Health Specialist	76	32%
3.	Others	10	4%
T O T A L		240	100 %

#### Final Survey Results

§ The TBA arrived in the midst of delivery for three (3) mothers.

Three percent of mothers (6/240) were assisted by formal health personnel because of pre-determined high-risk. None were referred for complications at the time of delivery. Most stated that they chose a TBA instead of a midwife or doctor because it was their custom or that facilities were too far away. On the average first contact with the TBA was made in the second trimester. One third waited until the last trimester and 21% waited until the final month. Table 3 (see next page) shows the training status of

the Traditional Birth Attendants (TBAs) who assisted the 154 mothers in their deliveries. Thirty-four (14% of all) deliveries were assisted by PCI trained TEAs.

**TABLE 3**

**T B A TRAINING STATUS**

No.	C a t e g o r y	T o t a l	Percentage
1.	Trained Midwives/T.B.A.	71	46 %
2.	Untrained Midwives/T.B.A.	43	28 %
3.	Don't know	40	26 %
T O T A L		154	100 %

Final Survey Results

It was learned that half the TBAs used scissors to cut the umbilical cord, while many of them still used traditional instruments like the bamboo wedge (see Table 4).

**TABLE 4**

**INSTRUMENTS USED FOR CUTTING UMBILICAL CORD**

N O .	C A T E G O R Y	T O T A L	P E R C E N T A G E
1.	S c i s s o r s	78	51%
2.	B a m b o o	44	29%
3.	R a z o r	29	19%
4.	K n i f e	1	<1%
5.	Don't know	2	1%
T O T A L		154	100%

Final Survey Results

In order to dry the umbilical cord, more than half (58%) of the TBAs utilized solutions such as alcohol, lamp spirits (methanol), or iodine (see Table 5 next page). A large number (41%), however, still applied traditional means including ashes,

hot oil, lemon, leaves, betel nut, nutmeg seed, vinegar and pepper solutions, red clay, and honeycomb. A number also utilized flame or smoke to dry the umbilical cord.

**TABLE 5**

SOLUTION/SUBSTANCE USED TO DRY UMBILICAL CORD

No.	CATEGORY	TOTAL	PERCENTAGE
1	Alcohol	62	40 %
2	Methylated spirits	22	14 %
3	Iodine	6	4 %
4	Traditional treatments	63	41 %
5	Don't know	1	<1 %
	T O T A L	154	100 %

**inal** Survey Results

Only 9% of mothers were referred by the TBA for assistance prior to or at the time of delivery. Referrals were made for dizziness (4), multi-parity (5), fever (3), frequent vomiting (2) and bleeding (1).

Traditional Birth Attendants (**TBA**s) are paid for their services in a variety of ways. While most receive cash payments, remuneration may also be made with cloth, clothes, rice, etc. Almost half of the mothers stated they gave **Rp10,000** (US\$4.60) or more to the TBA and only 14% gave nothing, Cross-tabulation showed a significant correlation with whether the TBA was trained or not. Trained **TBA**s were more likely to receive payment of more than **Rp5,000** than untrained **TBA**s (see Table 6 on next page).

It was found that 97% of respondents who used the services of a TBA received post-natal care until the umbilical cord was dry or had detached. **TBA**s generally came to the house daily for 7-8 days after delivery to examine the umbilical cord, change the dressing, and enquire after the mother.

**TBA**s trained in the PC1 program were supposed to give mothers a Road-to-Health (RTH) card for the baby and advise that she take the newborn to the **Posyandu** for its first immunization the following month. They were also supposed to refer mothers for TT immunization during pregnancy. More than one-third of mothers delivered by **TBA**s admitted to receiving this advice on TT and half were advised on baby immunizations.

TABLE 6

PAYMENT OF MIDWIVES/TRADITIONAL BIRTH ATTENDANTS  
ACCORDING TO TRAINING STATUS

No.	Payment	Trained Midwife	Percent -age	Untrained Midwife	Percent -age
1.	No payment	7	10%	11	26%
2.	<Rp1000	1	1%	3	7%
3.	<Rp5000	9	13%	1	2%
4.	Rp5-9,999	7	10%	7 †	16%
5.	≥Rp10,000	46	65%	16 †	37%
6.	Other	1	1%	4	10%
T O T A L		71	100%	43	100%

Final Survey Results

t ( $\chi^2 = 4.49$ ;  $p < .05$ , Odds Ratio = 2.56)

\* ( $\chi^2 = 7.14$ ;  $p < .01$ , Odds Ratio = 3.10)

Two additional questions were added to the final survey questionnaire regarding breast-feeding practices. In regard to exclusive breast-feeding, it was found that 44% (88) of the 202 women with children over three months of **age**, started **supplementation** before the child was four months old. It was also found that after delivery only 37% (89) of mothers put their babies to the breast within the first hour. Almost one-quarter waited more than three days!

#### D. Maternal Tetanus Toxoid Immunization

About one-third of mothers knew that tetanus toxoid immunization is needed for both mother and child. Only 18% stated that TT was only for the child and almost half were not certain enough to venture an answer. More than half (58%) knew that a mother should have two or more tetanus shots for adequate protection.

A total of only 69 (29%) respondents were found to have proof of having received Tetanus Toxoid (TT) immunization, either by possession of a Health Card (N=22), or by being registered in the Health Center register (N=47) verified at the time of survey. Table 7 (next page) indicates that of these, only 54 respondents (23%) had received the required number of injections i.e. at least 2 injections.

TABLE 7

**TETANUS TOXOID IMMUNIZATION STATUS  
OF ALL WOMEN (n = 240)**

No. injections received	No. mothers	Overall Percentage
No evidence	171	71.8
One dose	15	6 %
Two or more doses	54	23 %
T O T A L	240	100 %

Final Survey Results

The Tetanus Toxoid Immunization status of mothers who delivered in the past year (N = 122) was examined separately. There was no significant difference. Only 30% (36/122) had proof of immunization (14 with Health Card and 22 registered in the HC books), Amongst these 122 mothers only 27 (22%) received full immunizations.



TABLE 8

**TETANUS TOXOID IMMUNIZATION STATUS OF  
WOTHERS WHO DELIVERED IN THE PAST YEAR**

<u>No. of Injections</u>	<u>Mother with Proof</u>	
Two times	27	22%
Only once	9	7%
None received	86	71%

---

Final Survey Results

**E. Fosvandu Activity and Child Immunization Coverage**

**1. Fosyandu**

From the 30 clusters surveyed only 28 clusters (92%) had established Posyandu. It was found that only 162 (68%) children in the survey group had a child Road-to-Health card (RTH). Of this total 2 (<1%) health cards were retained by village *Fosyandu* cadre.

More than half (528) of respondents stated that they brought their child to *Posyandu* in the previous month (April, 1994). A total of 94 (39%) mothers attended *Posyandu* with their child during each of previous three months (February! March, April 1994) and 29% for six months without interruption. Average attendance during the previous three months was 48% of children under two years.

**2. Immunization Coverage**

In order to gain as much information as possible about immunization coverage, Health Center staff were requested to bring the register of immunizations (*Euku Runing*) to the sample cluster villages during the survey. This strategy increased the amount of information received regarding immunization coverage by 6%.

The summary of immunization data for 12-23 month old children may be seen in Table 9.

**TABLE 9**  
**CHILD IMMUNIZATION COVERAGE**  
**FOR 12-23 KONTN OLD CHILDREN**

A G E ( MONTHS )	BCG	D P T			P O L I O			Measles	Fully Immunized
		I	II	III	I	II	III		
12 - 23	86	87	84	83	87	84	83	GO	75
(N = 118)	73%	74%	71%	70%	74%	71%	70%	68%	64%

The following criteria were used to analyze and report immunization coverage:

- Complete immunization:** . Having received BCG, DPT1-3, Poliol-3, and measles  
. Written proof of same including date of immunization
- Complete immunization received before 12 mos of age:** . In accordance with the above criteria PLUS  
. All immunizations received before 12 months of age
- Complete and correct immunization:** . In accordance with the above criteria PLUS  
. All immunizations received before 12 months of **age**  
. Measles immunization received not before after 9 months of **age**.

An examination of Child Health Cards (RTH) addition to Health Center Register (*Posyandu*) records for children in the 12 months or older age group indicated that 75 (64%) out of a total of 118 children had received all their immunizations. It was found that of those children who had completed their immunizations, only 71 (60%) had received them before 12 months of age. Moreover, some children received their injections too early (7 children had received their measles immunization before 9 months of age). Thus, there were only 64 children (54%) who were both **completely and correctly** immunized before 12 months of age.

## F. Diarrheal Disease Management

In accordance with international convention, information is gathered only from children who have had diarrhea in the previous two weeks in order to insure that information about treatment of diarrhea is as reliable as possible. It has been found that **4mothers'** histories about the diarrheal illness and its treatment are not very accurate beyond the previous two weeks. Out of all the respondents only 50 children (21%) had diarrhea during the previous two weeks.

In order to measure the project objectives several criteria were used to assess diarrheal treatment in children:

■ **Use of ORS (Oral Rehydration Solution)** defined by the proportion of mothers who stated that they gave **Oralit** or SSS (Sugar-Salt Solution) to their child during their diarrhea;

■ **Knowledge about providing ORT (Oral Rehydration Therapy)** defined by the proportion of mothers who stated that they gave additional breast milk, fluids, **and food** during their child's diarrhea;

■ **Knowledge about the signs of dehydration** defined by the proportion of mothers who mentioned at least one of several accepted signs of dehydration as impetus to take their child to a health facility for examination.

In Table 10 is shown the choices of treatment first offered at home by mothers to their children with diarrhea during the previous two weeks including the use of **Oralit** and SSS.

**TABLE 10**

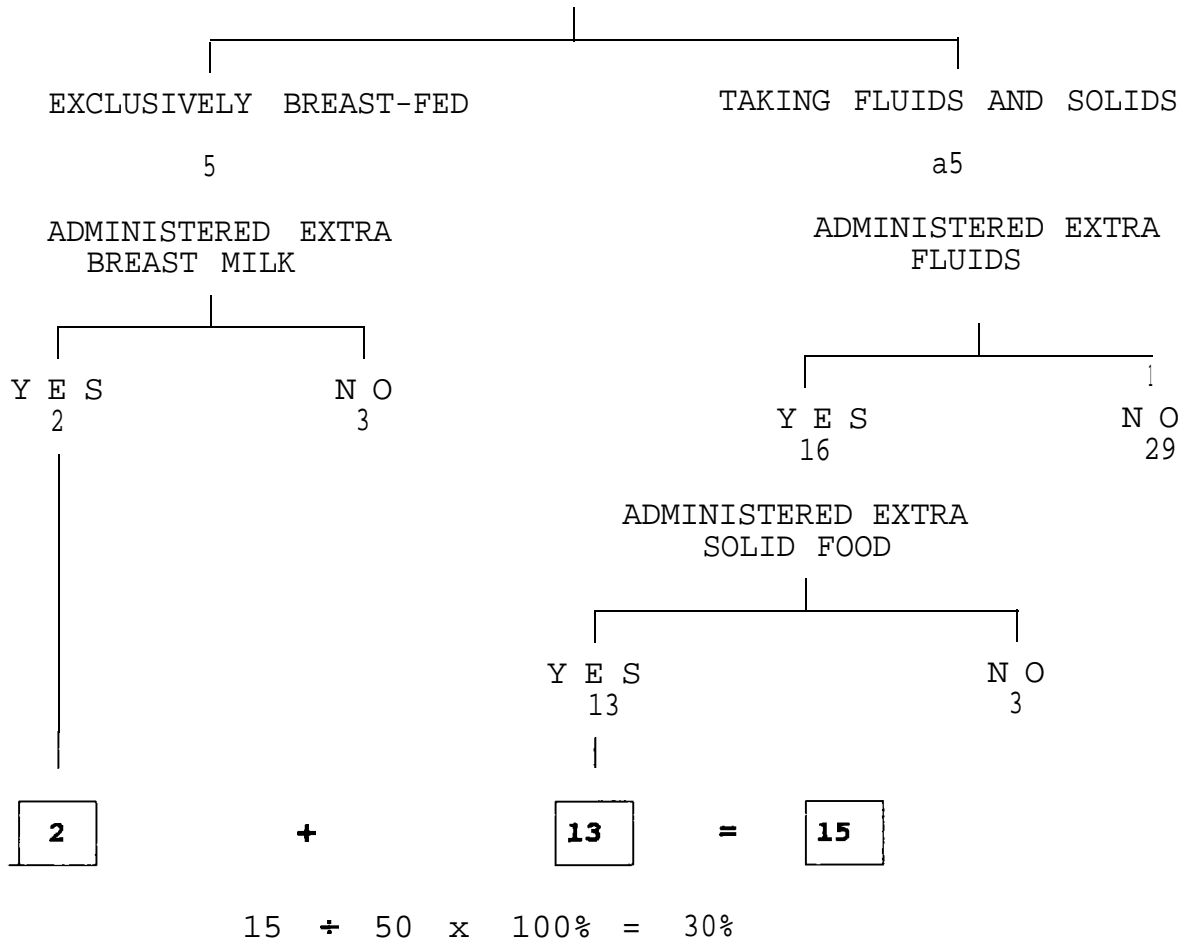
### **DIARRHEAL TREATMENT DURING THE PREVIOUS 2 WEEKS**

(N = 50)

<u>TREATMENT</u>	<u>TOTAL</u>	<u>PERCENT</u>	
Nothing given	14	28%	
Anti-diarrheal medication or antibiotics	6	12%	
<b>Oralit</b>	21	42%	50%
sss	4	8%	
Other fluids	2	4%	
Rice water	1	2%	
Other (traditional)	2	4%	

out of the 50 children who had diarrhea during the previous two weeks (see scheme below) five children were exclusively breast-fed of which only two were given increased feedings. Amongst the rest thirteen (13) out of 45 were given increased quantities of fluids **and** solid food. Thus only 15 mothers (30%) administered this regimen of diarrheal therapy correctly.

D I A R R H E A  
N = 50/240 ( 21% )



In this final survey, assessment of the mother's knowledge of the signs of dehydration required that at least one of the following signs be mentioned:

- Dry mouth
- Sunken eyes
- Decreased urination
- Decreased consciousness
- **Malaise/weakness**
- Bloody stools

Indeed, the latter sign is not a sign of dehydration, but if it exists mothers should nevertheless know that it is necessary to bring their child to the nearest health facility because of the risk of a more serious dysenteric infection.

Out of the 240 mothers surveyed for knowledge about the signs or symptoms that would prompt them to bring their child to a health facility for exam, 98 (41%) of them mentioned at least one of the signs listed above (See Table 11). Twenty (8%) mothers mentioned two .

TABLE 11

SIGNS/SYMPTOMS OF DEHYDRATION IN CHILDREN WITH DIARRHEA

<u>SIGN/SYMPTOM</u>	<u>TOTAL</u>
■ Dry mouth, sunken eyes, or decreased urination	26
■ Decreased consciousness or malaise/weakness	98
■ Bloody stools	1
I Other (vomiting, fever, frequent diarrhea, poor appetite)	148
■ Did not know	50

Only twenty percent of mothers (48) were found to have a packet of **Oralit** in the house at the time of the survey interview. More than half of these packets were obtained at the local health clinic or hospital, and the remaining from *the Posyandu*.

#### IV. Discussion of Results:

This Final Survey was conducted for the **entire** province. Results are to be compared to results from the combined Baseline Surveys from Phase I and Phase II (See Appendix E for tabulated comparisons of Baseline and Final survey results). As mentioned earlier, the Phase I baseline survey was conducted ten months **after the Phase I survey and the combined results** analyzed (weighted for population differences). The time difference is not **felt to be significant because** the Phase I area which contains 26% of the population was not likely to have experienced any significant health intervention during that time that would have measurably affected the results. The decision to do the survey in step-wise phases was at the request of the MOH, who **wanted** interventions done in a step-wise fashion. It is safe to say **that** the health situation in Area I is better than that in Area II since the latter **area recognizably** has more problems with **access** to health services, governmental infrastructure, and communications.

##### A. Demography

Demographic characteristics of the baseline **and** final survey populations were similar, except for the proportion of Moslem and Christian mothers (see Table 12).

TABLE 12

##### DEMOGRAPHIC DATA

	CATEGORY	BASELINE	FINAL
AGE OF MOTHERS	RANGE (yrs)	17-42	17-44
	AVERAGE	26.8±0.4	27.5±0.4
MOTHERS ' RELIGION	CHRISTIAN	55 %	37 8
	I SLAM	45 %	63 %
GENDER OF CHILD	'MALE	47 %	47 %
	FEMALE	53 %	53 %
AGES OF CHILDREN	0 - 11 MOS	58 %	51 %
	12 - 23 MOS	42 %	49 8

It was apparent during the survey that many of the mothers in our sample population originated from areas outside of Maluku

--- mostly from **Buton** Island in SE Sulawesi. Only 8% of the sampled mothers had not attended nor completed school up to Grade 3 (Baseline = 9%). Of the remaining (considered literate) mothers, half had finished primary school and the rest had gone **beyond** middle school. It was noted in the baseline survey that Moslem mothers were less likely to have finished elementary school ( $\chi^2 = 3.86$ ,  $p < 0.05$ ). Also Moslem mothers were somewhat more likely to be illiterate than Christian mothers ( $\chi^2 = 9.33$ ,  $p < 0.05$ ). The latter was true for the final survey as well ( $\chi^2 = 4.11$ ,  $p < 0.05$ ).

Nevertheless, it was interesting to find, upon performing cross-tabular analysis of literate vs. illiterate mothers, that there were no differences in the likelihood of their children being fully immunized, having had diarrhea in the previous two weeks, receiving ORS for **diarrhea**, or being delivered by a formally-trained health worker. In addition, there was no correlation between the likelihood of the mother having two tetanus toxoid immunizations during pregnancy or having **Oralit** in the home with level of literacy. Thus, literacy did not seem to have an important influence on the health indicators measured in this survey.

## B. Maternal Care and Knowledge

A significant proportion of mothers seemed to be aware of the need for pre-natal care with most realizing the need for an exam during the first two trimesters. Sixteen per cent, however, stated there was no need for an exam or they did not know when to seek **care**. There **was an** increase in the percentage of women who knew they should visit the health facility in the first trimester from 35% to 50% ( $\chi^2 = 11.03$ ,  $p < 0.001$ ).

In addition, a significant proportion knew the importance of eating certain foods like green **leafy** vegetables and protein during pregnancy. Figure 1 (next page) shows the improvement in this knowledge. The improvement in **knowledge** about iron-rich foods like meats, eggs, and fish increased from 10 to 29% ( $\chi^2 = 10.31$ ,  $p < 0.002$ ). However, only one-third knew that it was necessary to eat more than usual quantities of food during that time with only a slight increase over the baseline survey (31% to 38%). In addition, there seemed to be little knowledge regarding the importance of weight gain during pregnancy as 96% of the respondents either did not know or were wrong when asked the ideal amount of weight gain (10-12 kg) **that** should be sought. This was the same for the baseline. It is likely that many rural women are not used to thinking in terms of weight gain in general (scales not always being available) as a significant sign much less as a measure of adequate intrauterine **growth**.



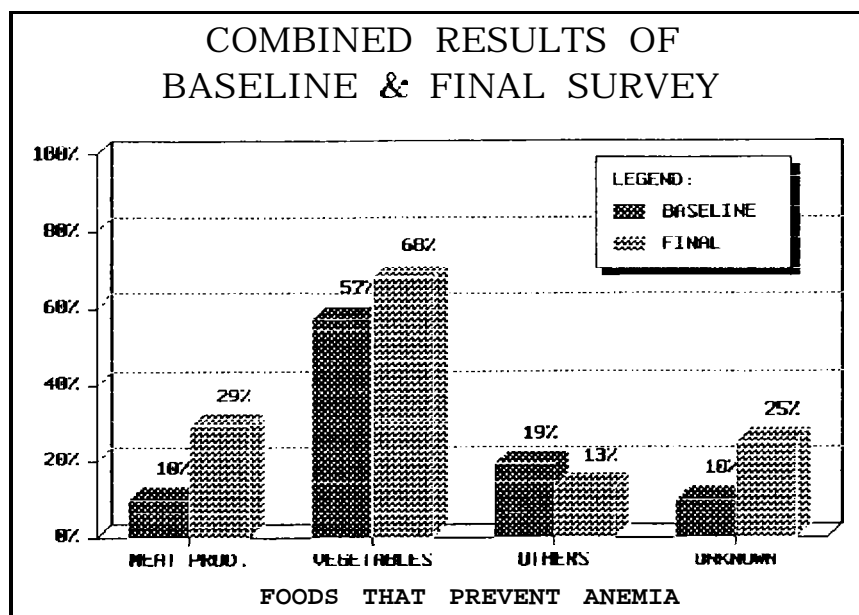


Figure 1. Comparison of Baseline and Final survey results for knowledge of foods needed to be consumed to prevent anemia in pregnancy.

By interview three-quarters of mothers claimed they visited a health facility during their pregnancy. There was a significant improvement ( $\chi^2 = 8.87$ ,  $p < 0.005$ ) in the proportion of mothers who claimed they made at least two visits (increase from 74 to 91%) with a comparable decrease in those who made no visit (16% to 2%).

### c. Delivery Knowledge and Practice

Almost two-thirds of the women surveyed used traditional birth attendants to deliver their child primarily because the TBA was closer than the midwife/doctor at the health center, and it was already customary to use her services. Most of these TBAs were known to have received some training from the MOH. There were no differences in religion (Christian or Moslem) as to the tendency to use a TBA for delivery services and both were just as likely to use a trained TBA.

It was comforting to see by means of cross-tabulation of the data that trained TBAs were about six times more likely to use scissors to cut the cord than untrained TBAs ( $\chi^2 = 33.3$ ;  $P < 0.00001$ ) and more than four times more likely to use alcohol, spirits, or iodine to dry the cord after cutting ( $\chi^2 = 29.0$ ;  $P \sim 0.00001$ ). This speaks well for the value of training TBAs. Despite this good news there were still about half the TBAs who

used traditional **means** to cut and treat the cord. Perhaps this is a reflection of the need for improved training or interval refresher training. Once again there seemed to be no statistical correlation between a mother's religion and use of traditional medicine.

There was no dramatic alteration in the usage of cord cutting tools or medications for cord care by the final survey results. There was an increase in usage of scissors from 41 to 518, but **bamboo** was still being used for 30% of the deliveries. Figure 2 reveals that the usage of alcohol for drying the cord doubled but traditional means still persisted.

### COMBINED RESULTS OF BASELINE & FINAL SURVEY

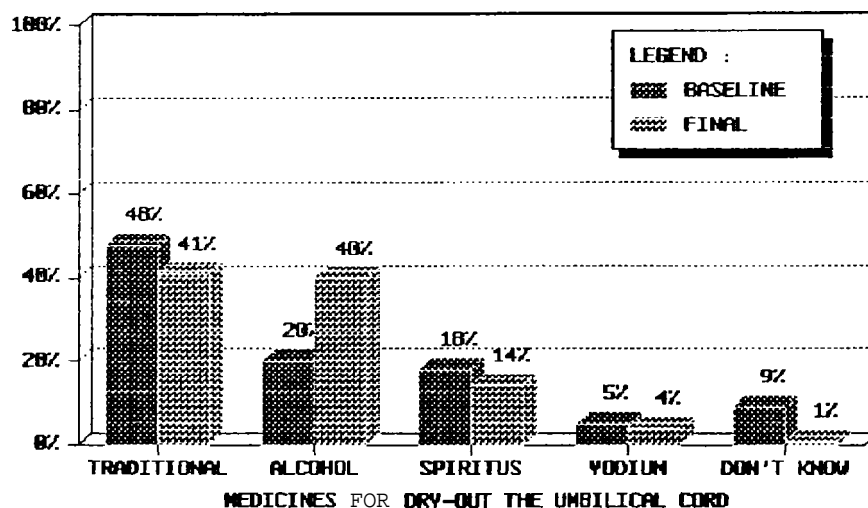


Figure 2. Comparison of baseline and final survey results for umbilical cord treatment

TBA training was conducted between January and December, 1993. Although 1,485 **TBAs** were trained (25-30% of the total number of TBAs in the province), there **has** barely been sufficient time for these **TBAs** to impact on the newborns in the population. In the final survey there were only **34 mothers delivered by PCI-trained TBAs**. This amounts to less than 15% of the mothers surveyed. In these 34 deliveries the cords were cut with a scissor **and** proper cord care applied in **all cases**.

Another important consequence of training **TBAs** was noted in the data analysis. Trained **TBAs** were more likely to receive greater compensation (sums greater **than** Rp 10,000) for their services **than** untrained **TBAs** ( $\chi^2 = 7.14$ ;  $PCO.01$ ). It is, indeed, reassuring **that** TBA training not only benefits the health of

mothers and children in the community, but also improves the economic status of the TBA herself. This strongly supports the value of TBA training for sustaining Women in Development activities.

Women who were delivered by a TBA were, not surprisingly, less likely to have pre-natal exams at a health facility, once **again** due to the need to leave the village and local customs.

#### D. Maternal **Tetanus Toxoid Immunization**

Only a small proportion of women (29%) interviewed were able to provide evidence of tetanus toxoid immunization in the form of a Maternal Health Card (**Kartu Kesehatan Ibu**) or from the clinic Posyandu records (Red Book). This makes firm documentation of maternal immunization status difficult at best. Some mothers had received cards during their pregnancy at the time of pre-natal exams or TT administration, but these had subsequently been lost or retained by the local health facility at the time of delivery. The use of the Maternal Health Card does not seem to be widespread as yet in Maluku. Because of the lack of cards it is possible that the practice of giving TT at the Posyandu is therefore not as routine as with children who almost always have a EMS.

It is likely that some mothers received TT immunizations without having a recording made on a card. Information about immunizations administered and recorded in hospitals, private practices, or clinics could not be obtained in the scheme of this survey. Also there are mothers who received only one immunization during their last pregnancy but are technically completely immunized because of having received immunizations in a previous pregnancy. Complete immunization status cannot currently be assessed in either of the above situations by the **MOH** or with the new Local Area Monitoring (PWS) program. Thus, for now we have to settle for a best estimate of the TT immunization status of mothers. Those with proof provide a **minimal** estimate.

Indonesia has had a policy of only allowing pregnant women to be immunized with TT and more recently elementary school children in two grades. In order to accelerate improved TT coverage, PC1 in 1993 requested and obtained permission from **EPI/National** to undertake a program of immunizing **all** women of child-bearing age who attended the *Posyandu* (regardless of pregnancy status). The new campaign emphasizes that women of child-bearing age need five tetanus toxoid shots to attain life-time immunity. In order to monitor the program, PC1 designed and printed 100,000 TT Lifetime cards for distribution and recording. Currently with the support of UNICEF and WHO, and based on the PC1 field trials of the new card, the central **MOH** is modifying national EPI policy. The use of the Lifetime card will obviate

the further use of immunization cards for marriage candidates and pregnant women. Since the program just began in late 1993 in two districts, there are still not many TT **cards** in the community.

#### E. Posyandu Activity and Child Immunization Coverage

More communities in the final survey had *Posyandu* (92% compared to 78%). There was a significant improvement in the proportion of children under two possessing RTH cards rising from 49% at baseline to 68% in the final survey.

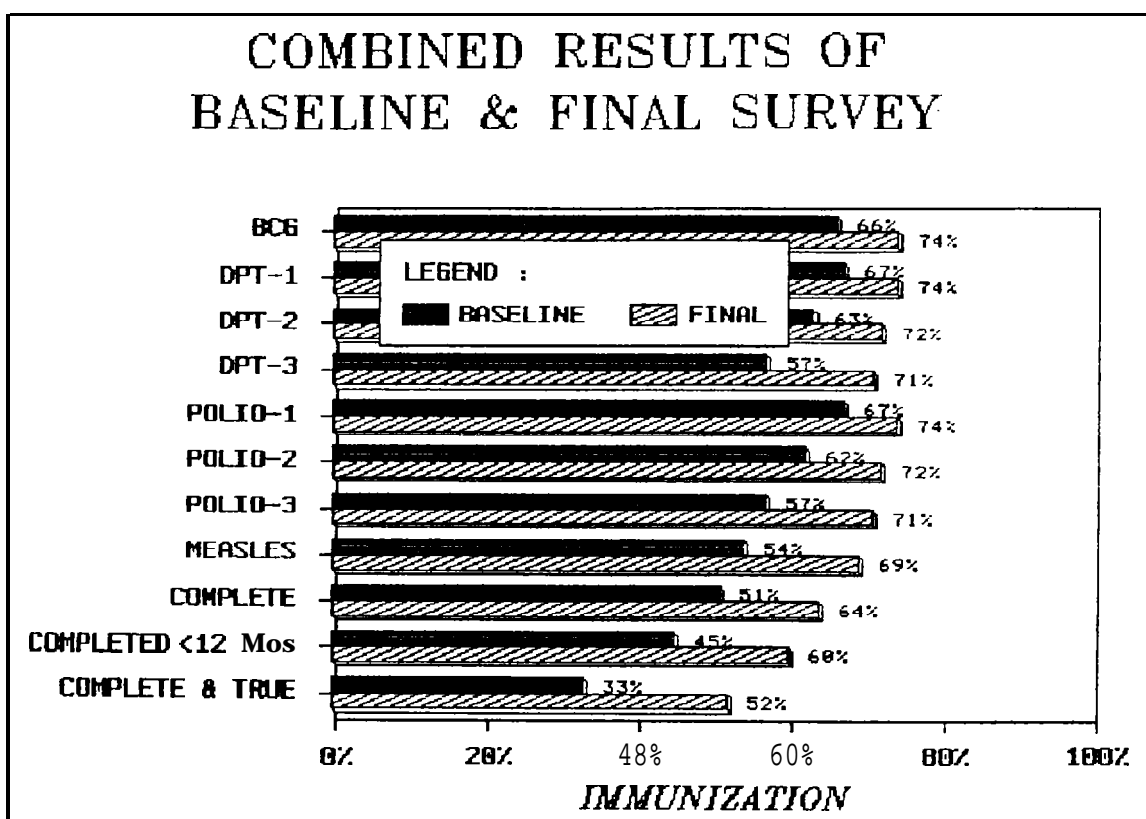
The Indonesian central MOH recommends attendance monthly at the *Posyandu* for all children below five years of age, even after immunizations are complete in order to monitor growth and receive other services like health education, Vitamin A and **Oralit** for diarrhea management. This baseline survey showed that 23% **had** attended the previous month (October, 1991), and only 18% attended consecutively for the three previous months. Oddly enough the attendance for the six previous months (May - September) averaged 30%. The lower than average attendance for the month of October is anomalous and may likely be explained by the fact that October is the peak of the spice harvest season when many mothers are working outside the village picking cloves or nutmeg and have neither the time nor the means to attend *Posyandu*.

By the spring of 1994 these figures had **dramatically** improved. Consecutive attendance during the previous three months more than doubled rising to 39% with average attendance increasing to 48%.

Further analysis of **Posyandu attendance** reveals that there is a definite correlation with the age of the child. Cross-tabular analysis confirms that there is a dramatic drop-off in attendance with 12-23 month-old children only half as likely to attend during the previous three months than under 1 year-olds ( $\chi^2 = 10.3$ ;  $p < .005$ ). This is not surprising to those who are convinced that immunizations serve as the greatest inducement for *Posyandu* attendance. Once a child is completely immunized, the mother is less likely to return since growth monitoring and health education alone **are** likely not as strong an enticement.

The use of the **EpiInfo** 5.1 computer program allowed for the ready analysis of immunization data. Aside from determining which children are completely immunized, the program permits the researcher to assess whether immunizations have been given **at the** proper time by readily converting dates to ages (in days, weeks, or months). Thus, it is feasible to determine not only which children are completely immunized, but also which children are completely **and correctly immunized**.

This feature allows the researcher to estimate the level of effectiveness of the immunizers in the field apart from all the other problems that routinely plague immunization programs relating to cold-chain logistics, transportation, staffing, inadequate funding and community acceptability.



**Figure 3** Immunization coverage from baseline and final surveys for Maluku Province.

In this survey population, it was found that although 64% of the 12-23 month old children had received all their immunizations, only 60% received them before they were one year of age. This is further decreased by the elimination of all children who received their measles vaccine before 9 months of age (<37 weeks) because vaccine administered before this time is considered to be ineffective at imparting lasting measles immunity and probably should be repeated. This criteria brought the percentage of children completely and correctly immunized before the age of 12 months to 54%. The 10% statistical limits of error of this 30-cluster sampling technique dictate that we can be 95% confident that the true coverage rate falls between 50% and 70% for the province. The national target for Universal Child Immunization is set at 80%.

While DPT1 coverage is a reflection of immunization services and Polio3 is a measurement of program effectiveness, an estimation of the immunization program efficiency can be made through the calculation of the Drop-Out Rate:

$$DROP-OUT \ RATE = \frac{\%DPT1 - \%POLIO3}{\%DPT1} \times 100$$

From our survey the rate was 4% which is a considerable improvement over the 15% obtained from the baseline.

#### F. Diarrheal Disease Management

The 21% incidence of diarrhea during the two weeks preceding the survey is higher than expected but is consistent with the dry season when water supplies are low and water-borne disease relatively higher.

The oral history of usage of ORS is rose significantly from the usage rate during the baseline surveys (50% vs. 28%) (see Table 12).

TABLE 12

#### FIRST TREATMENT FOR DIARRHEA AT HOME

<u>TREATMENT</u>	<u>N = 45</u> <u>BASELINE</u>	<u>N = 50</u> <u>FINAL</u>
Oralit/SSS	28%	50%
Antidiarrheal/ATB	22%	12%
Traditional Rx	29%	4%
No treatment	22%	28%

Fortunately, we have seen a decrease in the use of antidiarrheal medications and antibiotics, plus traditional therapies. The former are medications that were administered by the mother at home before consultation at the health center or hospital. In the case of antibiotics and prescription drugs they were apparently unused medications from previous visits for other members of the family. Non-prescription anti-diarrheal drugs can be purchased over-the-counter at local drug stores or shops. It is apparent that a major community education effort is still needed regarding the use of ORS and warning against the use of

other medications for diarrheal disease in children. Another concern is the large number of women (28%) who gave no special treatment for the diarrhea at home. To be sure, some of these mothers who live close enough go directly to a health facility for treatment.

It is evident that most mothers have heard of ORS (Oralit or SSS) from histories given by the 81% of mothers whose children did not have diarrhea during the previous two weeks (See Table 13).

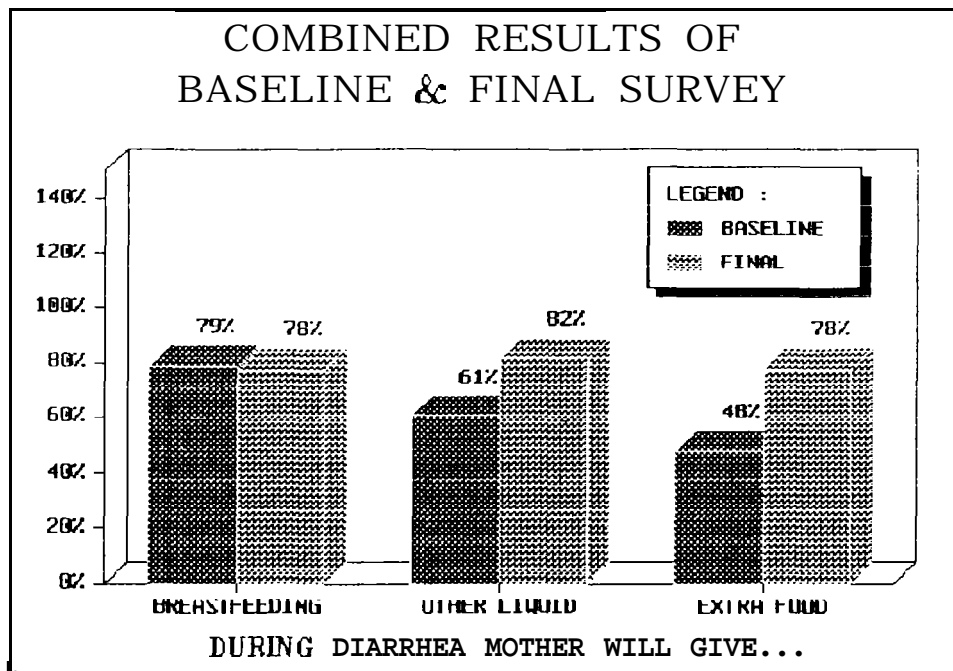
TABLE 13

**DIARRHEAL TREATMENT HISTORIES FOR CHILDREN  
WITHOUT DIARRHEA DURING PREVIOUS TWO WEEKS  
(N = 190)**

<u>TREATMENT</u>	<u>TOTAL</u>	<u>PERCENT</u>	
Nothing given	26	14%	
Anti-diarrheal medication or antibiotics	7	4%	
<b>Oralit</b>	92	48%	66%
sss	35	18%	
Other fluids	19	10%	
Rice water	2	1%	
Traditional Rx	9	5%	

In this case mothers were asked what first home treatment they had given in the past or what they would give if their child fell sick with diarrhea. These results are somewhat different from those mothers whose children had had diarrhea in the past two weeks suggesting a difference in knowledge and actual practice. Thus, more mothers (66%) seem to know about ORS than actually used it during the two weeks prior to the survey. Analysis showed no correlation between level of education and knowledge about or the tendency to use ORS.

It was comforting to find also that most mothers whose children have recently **had diarrhea are more aware of the need to** increase breast feeding, fluids and food intake during diarrhea (see Figure 4 on next page). Indeed, **the numbers (50 total) are** small, so the error is undoubtedly significant. If the same analysis is conducted on the 195 other mothers asking them what they would do if their child **had** diarrhea, the results **are almost** the same suggesting **the above data are probably valid.**



**Figure 4** Comparison of proportions of mothers responding that the same or more than usual amounts of breast milk, liquids, and solid food should be given to a child with diarrhea.

Given the improvement in maternal knowledge about diarrheal management at home, it was surprising to see there was no improvement in the proportion of mothers who knew at least one sign of dehydration (Table 11 above). Many mothers (33%) responded with the answer "frequent" or "continuous" diarrhea. As it is difficult to quantitate how much is "frequent" and for how long it should be considered "continuous," this answer was not considered a valid measure of danger signs for referral to a health facility in the context of this survey.



## V. Feedback

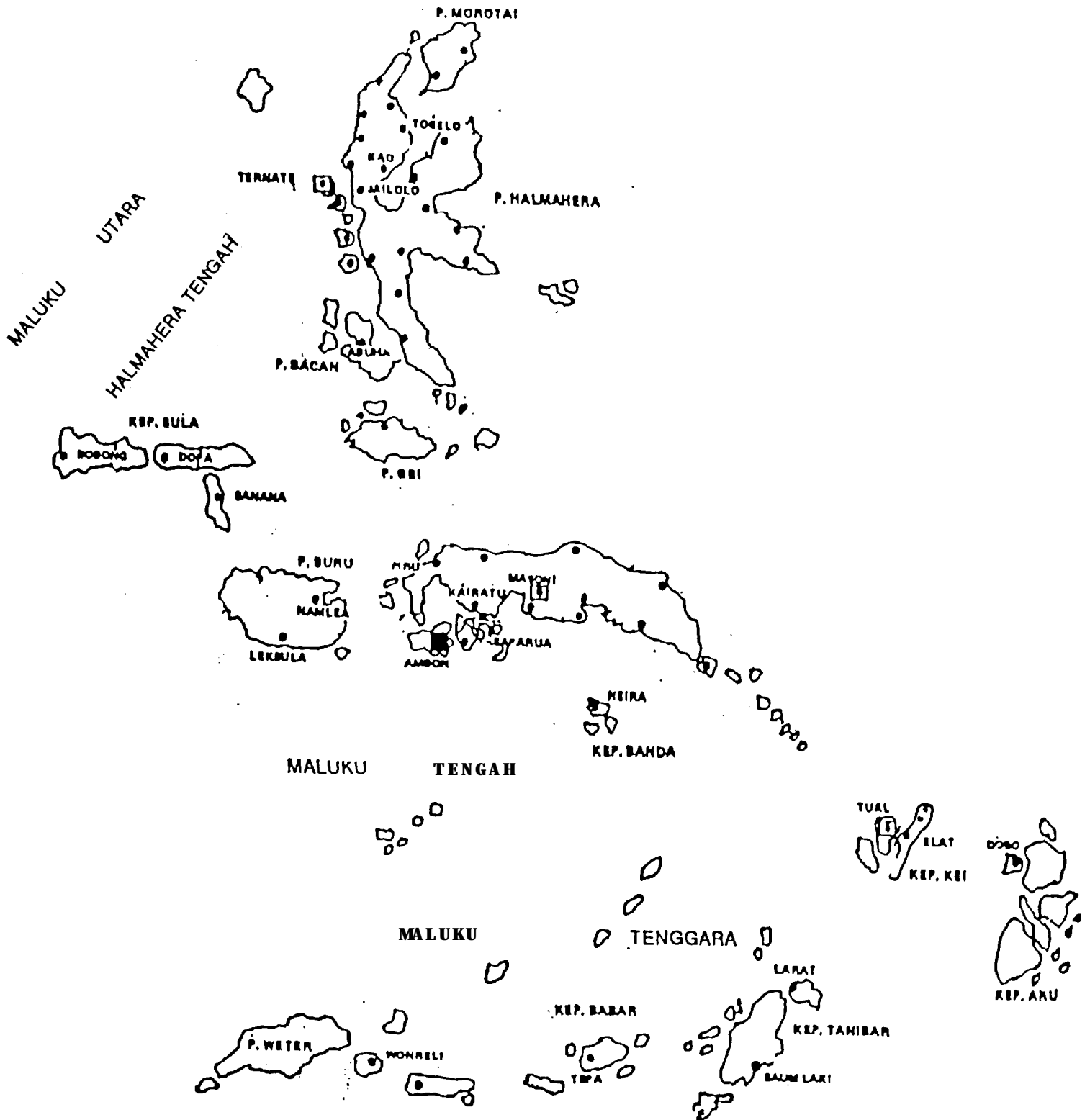
The data and results from this final survey were presented, discussed, and accepted at a meeting attended by PCI, Provincial MOH/Maluku staff and District Chief Medical Officers on June 17, 1994. The results have been subsequently with individual MOH officials in the ensuing months.

## VI. Survey Costs

The survey cost **US\$ 5,795** to conduct.

# MALUKU PROVINCE

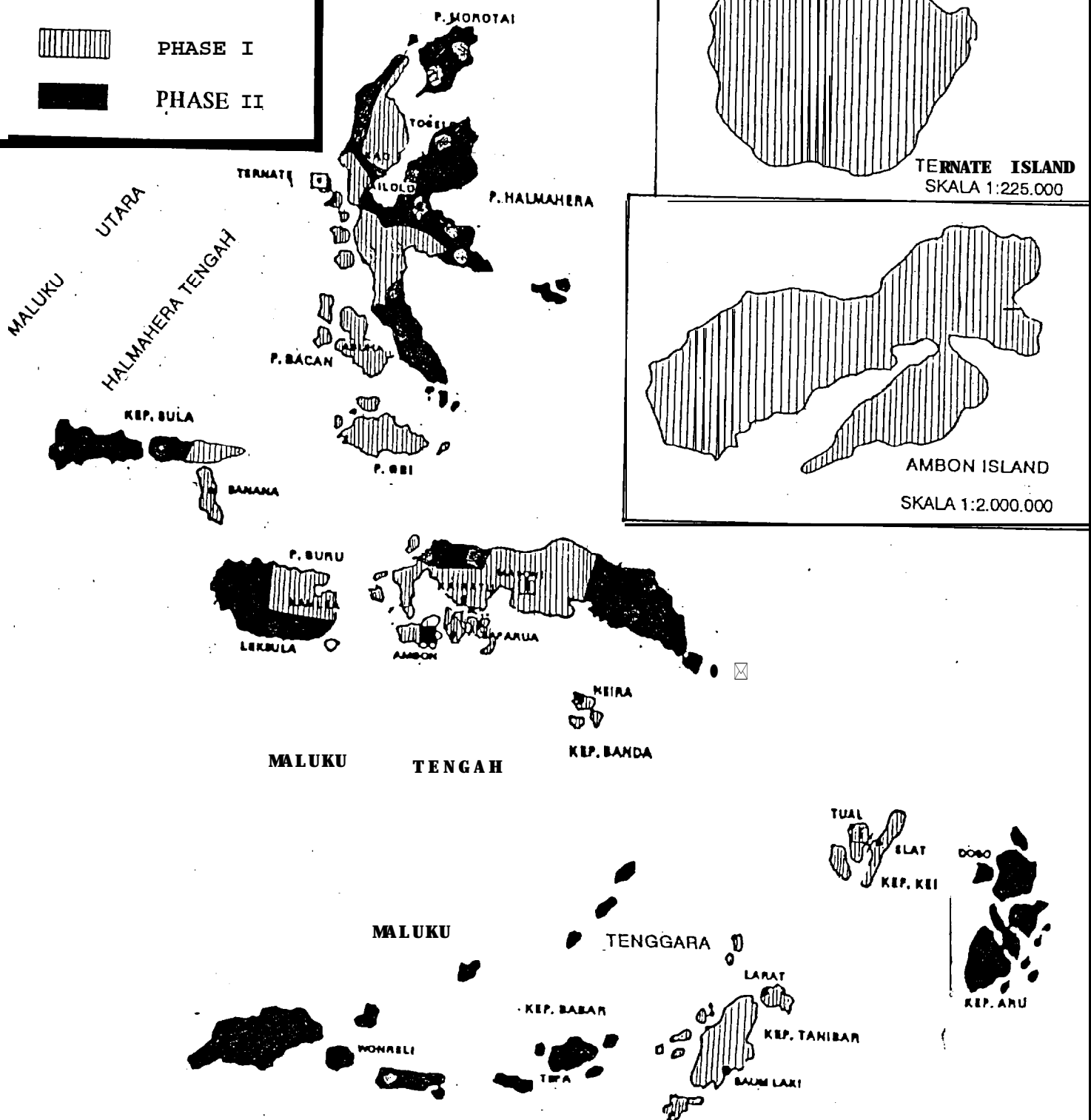
{MAP OF MALUKU}



**(MAP OF PROJECT AREAS BY PHASES)**

LEGEND:

## PHASE II



**TERNATE ISLAND**  
SKALA 1:225.000

AMBON ISLAND  
SKALA 1:2.000.000



5. Does the mother work outside the house ? N=240
- |        |       |                                      |
|--------|-------|--------------------------------------|
| 1. yes | [22 1 | 9%                                   |
| 2. no  | [218] | 91% - fill in no. "1" at no. 6 and 7 |
6. Is there "Work that gives income" ? N=240  
(May answer more than one)
- |  |       |     |
|--|-------|-----|
| 1. None                                      | [218] | 91% |
| 2. Skill, plait a mat! rattan and others     | [ ]   |     |
| 3. Harvest laborer, pick fruits, tea, others | [ ]   |     |
| 4. Sale agricultural produce/fish            | [ 1   |     |
| 5. Sale food                                 | [ 2 ] | <1% |
| 6. Helper/Server/give services               | [ ]   |     |
| 7. Shop guard, road border guard             | [ 4 3 | 2%  |
| 8. Govt. Employee                            | [13 1 | 5%  |
| 9. Fisherman                                 | [ ]   |     |
| 10. Farmer                                   | [ 3 3 | 1%  |
| 11. Others (explain)                         | [ 1 1 | <1% |
7. Who is taken care (child's name) during mother is leaving for work ? (May answer more than one) N=240
- |                                       |       |     |
|---------------------------------------|-------|-----|
| 1. Don't work outside the house       | [218] | 91% |
| 2. <del>Husband/colleagues</del>      | [ 1 ] | <1% |
| 4. Older Child                        | [1 ]  | <1% |
| 5. Relatives                          | [15 1 | 6%  |
| 6. Neighbor/friend                    | [1 ]  | <1% |
| 7. <del>Helper</del> to entrust child | [ 3   |     |

### MOTHER TREATMENT

8. When should a mother visit a health specialist (doctor, nurse, midwife or TBA) after knowing the pregnancy ?  
(estimate in months) N=240
- |   |       |     |
|---|-------|-----|
| 1. First quarterly of pregnancy, 1-3 months     | [121] | 50% |
| 2. Middle of the month of pregnancy, 4-6 months | [57]  | 24% |
| 3. Last quarterly of pregnancy, 7-9 months      | [23]  | 10% |
| 4. No need that a health nurse come to visit    | [15]  | 6%  |
| 5. Don't know                                   | [24]  | 10% |
9. Which food is good for mothers to prevent Anemia ?  
(may answer more than one) N=240
- |   |       |     |
|---|-------|-----|
| 1. Rich in protein or iron<br>(egg/fish/meat)   | [69]  | 29% |
| 2. Green vegetables (containing iron substance) | [163] | 68% |
| 3. Others (explain) _____                       | [32]  | 13% |
| 4. Don't know                                   | [60]  | 25% |
10. How much should a mother increase her body weight when pregnant ? N=240
- |   |       |     |
|---|-------|-----|
| 1. 10-12 kilogram                         | [14]  | 6%  |
| 2. Heaviest as a baby (should say "baby") | [46]  | 19% |
| 3. Others know (explain) _____            | [166] | 69% |
11. At the time you were pregnant (child's name), how much food did you eat ? (read the choices below to the mother) N=240
- |                      |       |     |
|----------------------|-------|-----|
| 1. More than usual ? | [92]  | 38% |
| 2. As usual ?        | [110] | 46% |
| 3. Less than usual ? | [38]  | 16% |
| 4. Don't know        | [1]   |     |
12. At the time you were pregnant (child's name), did you go to a medical clinic for examining your womb ? N=240
- |               |       |     |
|---------------|-------|-----|
| 1. Yes        | [181] | 75% |
| 2. No         | [59]  | 25% |
| 3. Don't Know | [3]   |     |
- Continue to No. 14  
Continue to No. 14

13. During your pregnancy (**child's name**) how many **times** did you visit the medical clinic before you were given delivery ?  
N=181

1. one	[13 ]	7%
2. two or more	[165]	91%
3. none at all	[3 ]	2%

14. Did you once visited a TBA for your pregnancy (**child's name**)?  
N=240

1. <b>Yes</b>	[155]	65%
2. <b>No (continue to No. 16)</b>	[85 ]	35%

15. How many times have you been examined by a TBA before given delivery ?  
N=155

How many times :      <2 = 20      (13%)      Range = 1-15  
                              ≥    = 134      (86%)      Average = 3.6 ± 0.2  
                              DON'T KNOW = 1      (<1%)      Median = 3  
**If don't remember fill in "99"**

16. When you were given delivery (**child's name**) who has helped you to cut the umbilical cord ?    N=240

1. Mother herself	[5 ]	2%
2. Relatives	[8 ]	3%
3. TBA [ <b>continue to No. 18</b> ]	[151]	63%
4. Health Specialist (doctor,nurse,midwife)	[76 ]	32%
	<b>continue to 31</b>	
5. Others (explain) _____	[ 1 ]	

17. When you were given birth why were you **assisted** by another person (mother herself or relatives) not by a TBA? N=13

1. TBA <b>came to late</b>	[3 ]	23%
2. There were no TBA ( <b>continue to No. 32</b> )	[1 ]	8%
3. Own Decision ( <b>continue to N. 32</b> )	[9 ]	69%
4. Don't know ( <b>continue to No. 32</b> )	[ 3 ]	

18. Why did you choose a TBA to assist you with the childbirth (instead of a Health staff) ? N=154

1. <b>Can</b> effort paying when giving childbirth at Health Center/Hospital	[5 ]	3%
2. Not enough time to go to the health center/hospital or to far from home	[55 ]	36%
3. Afraid to go to the Health center/Hospital	[ 7 ]	
4. Because were accustomed to TBA	[87 ]	57%
5. Others _____	[2 ]	1%
6. Don't know _____	[5 ]	3%

19. Why did you choose that TBA (instead of other TBA)? **N=154**

1. TBA lives near the house	[47 1	31%
2. TBA have been trained	[23 3	15%
3. Recommendation from relatives/friend	[14 ]	9%
4. Well known TBA (good reputation)	[60 1	39%
5. Don't know	[10 1	7%

20. On which month of pregnancy (**child's name**) did you contact the TBA ? **N=154**

How many months approx.: 0-3 mos = 49 (32%) Average =  
 4-6 mos = 48 (31%) 5.3 mos  $\pm$  0.2  
 7-9 mos = 52 (34%) Median = 5 mos  
 9 mos = 33 (21%)

If you don't remember fill in "99"

21. When you have choose that TBA, did you know that the TBA was trained ? **N=154**

1. TBA was trained	[71 1	46%
Trained by PCI?	34/71 (48%)	22%
2. TBA was untrained	[43 1	28%
3. Don't know	[40 1	26%

22. When your child was born which tool did the TBA use to cut the umbilical cord ? **N=154**

1. Bamboo	[44 1	29%
2. Razor blade	[29 1	19%
3. Knife	[1 ]	<1%
4. Scissor	[78 ]	51%
5. Don't know	[2 3	1%

23. What kind of medicine/liquid did the TBA/mother to dry-out the umbilical cord ? **N=154**

1. Iodine	[ ]	
2. Alcohol	[62 ]	40%
3. Rubbing Alcohol	[6 ]	14%
4. Iodine	[63 ]	4%
5. Others		41%
6. Don't know	El 1	<1%



24. Does a TBA ever reconcile you to visit the Health center/hospital for assisting with the delivery (**child's name**) **N=154**

1. Once	[ 14 ]	9%	-
2. Never	[138]	90%	(continue to Number 26)
3. Don't know	[ 2 ]	1%	(continue to Number 26)

25. **Why** have you been reconcile ? (may answer more than one) **N=14**

1. Mother's age were less than 16 years	[	]		
2. Mother's age were more than 25 years	[	]		
3. Mothers tall were less than 140 cm	[	]		
4. Mother giving childbirth 5 times or more	[ 3 ]		21%	
5. Women with anemia	[	]		
6. Headache	[ 4 ]		29%	
7. Fever	[ 3 ]		21%	
8. Pale	[	]		
9. Vomiting for days during pregnancy/many times a day	[ 2 ]		14%	
10. Bleeding	[ 1 ]		7%	
11. Baby's position lie athwart/upside down	[	]		
12. Umbilical cord came out first	[	]		
13. Weak HIS or there were no progress with the childbirth during 24 hours	[	]		
14. Food was stiffen and swollen	[	]		
15. Others _____	[ 2 ]		14%	
16. Don't know _____	[ 1 ]		7%	

26. After the childbirth what (how much) did you give to the TBA? **N=154**

1. Do not give	[ 21 ]	14%
2. less than Rp 1,000	[ 6 ]	4%
3. Rp 1,000 - Rp 4,999	[ 18 ]	12%
4. Rp 5,000 - Rp 9,999	[ 25 ]	16%
5. Rp 10,000 or more	[ 71 ]	46%
6. Clothes	[	]
7. Sarong	[ 6 ]	4%
8. Chicken	[	]
9. Rice	[ 5 ]	3%
10. vegetables	[	]
11. Others _____	[ 2 ]	1%
12. Don't know/don't remember	[ 1 ]	

27. Are you still been visited by the TBA after you were given childbirth? **N=154**

1. Yes	[149]	97%
2. No (Continue to Number 29)	[ 5 ]	3%

28. How many times does the TBA visit you at home? **N=149**
- |                |             |             |                     |
|----------------|-------------|-------------|---------------------|
| How many times | : 1-7 times | = 110 (74%) | Range = 1-40 times  |
|                | >7          | = 36 (24%)  | Avg = 8.8 $\pm$ 0.6 |
|                | Don't know  | = 3 (2%)    | Median = 6 times    |

If you don't remember fill in "99"

29. When you were pregnant (**Child's name**) did the TBA remind you to get TT immunization (**on your shoulder**)? N=154

- |        |         |     |
|--------|---------|-----|
| 1. Yes | [ 54 1  | 35% |
| 2. No  | [ 100 ] | 65% |

30. When (child's Name) was borne did the TBA remind you that (child's name) need to be immunized? N=154

- |    |     |        |     |
|----|-----|--------|-----|
| 1. | Yes | [ 77 1 | 50% |
| 2. | No  | [ 77 1 | 50% |

Did the TBA give you a RTH card ? Yes [ 8 ] (5%) No [ 146 ] (95%)

Did the TBA give you a Vitamin A Capsule, during the first month after given childbirth? **Yes** [1] (**<1%**) **No** [153] (**99%**)

( C o n t i n u e t o N o , 32 )

31. When you were given childbirth why were you been assisted by a health specialist and not by a TBA? **N=76**

- |    |  |        |     |
|----|--|--------|-----|
| 1. | Were reconcile by TBA because complication | [ 1 ]  |     |
| 2. | Were reconcile by TBA because high risk    | [ 6 ]  | 8%  |
| 3. | Own Decision                               | [ 68 ] | 89% |
| 4. | Don't know                                 | [ 2 ]  | 3%  |

32. Do you know about Tetanus? Can you tell why a pregnant mother needs to be given a tetanus vaccine? **N=240**

- |    |   |         |     |
|----|---|---------|-----|
| 1. | To keep mother & newborn child from tetanus | [ 73 ]  | 30% |
| 2. | <u>Only</u> to keep mother from tetanus     | [ 9 ]   | 4 % |
| 3. | <u>Only</u> to keep child from tetanus      | [ 43 ]  | 18% |
| 4. | Don't know or other                         | [ 115 ] | 48% |

33. How many times must a pregnant mother been given a Tetanus injection in order to avoid mother and child from Tetanus ?  
N=240

1. One	[ 20 ]	8%
2. Two	[ 98 ]	41%
3. More than two	[ 42 ]	18%
4. None at all	[ 11 ]	5%
5. Don't know	[ 69 ]	29%

34. How many times should a Wanita Usia Subur been given a long-life time Tetanus injection (do not need again)? N=240

How many times : <5 times	= 337	(15%)
5	= 10	( 4%)
Don't know	= 193	(80%)

If don't remember fill in "99"

35. Do you have a card for mother health or yellow card for tetanus Toxoid ? N=240

1. Yes, Health Card	[ 15 ]	6%	(Show the card
2. Yes, Yellow card	[ 7 ]	3 %	Continue to No. 36)

3. No	[ 198 ]	83%
4. Lost	[ 14 ]	6%
5. taken by medical staff	[ 6 ]	2%

If answer 3, 4, or 5 (no card), can check in red book ?  
N=240

a. Yes, Name exist	[ 47 ]	20%	With prove :
b. Yes, Name does not exist	[ 63 ]	26%	15+7+47 = 69 (29%)
c. Can not check in the red book	[ 108 ]	45%	Continue to No. 39

36. Notice the TT cards and red book and write down the total received TT immunization : N=69

	Card	Red Book	Total	Coverage
How many times 1 time =	5	10	15	6%
≥ 2 times =	17	37	54	23%

37. Is there a place on your card to register your visit to the clinic before given childbirth? **N=69**

1. Yes [29] 42%  
 2. No [40] 58% **Continue to Number 39**

38. If yes, write down how many times did you ever visited the medical clinic before given childbirth. **N=29**

**How many times : > 2 times = 25 (86%)**  
 Range = 1-11 times: Average =  $3.5 \pm 0.5$ ; Median = 2 times

39. Are you pregnant? **N=240**

1. Yes [12] 5%  
 2. No [228] 95%

40. **For (child's name), at which month did you start given extra food (Other then Breastfeeding)? N=240**

**Above 3 months = 202**

How many months <4 months = 88 (44%)  
 ≥ 4 months = 109 (54%)  
 Don't know = 5 (3%)

Range = 0 = 12 months; Average =  $3.9 \pm 0.1$ ; Median 4 months

If don't remember fill in "99"  
 If not given extra food fill in "0"

41. After the child is born do you directly give breastfeeding (Colostrum) ? **N=240**

1. Yes [89] (< 1 hour) 37%  
 2. No [151] 63% **Explain how many times**

Explain the time : **N = 1511** **N = 240**

**c.**  
**d.** >13 -- 12 23hours hours [17] 18% 11% 11% 7%  
 1 day [27] 18% 11%  
 > 2 day [29] 19% 12%  
**e.** > 3 day [51] 34% 21%

## GROWTH MONITOR

42. Does this village have *Posyandu*? N=240

- |    |            |         |     |
|----|------------|---------|-----|
| 1. | Yes        | [ 221 ] | 92% |
| 2. | No         | [ 16 ]  | 7%  |
| 3. | Don't know | [ 3 ]   | 1%  |

43. Does (child's name) have a RTH card? N=240

- |    |                         |         |                     |
|----|-------------------------|---------|---------------------|
| 1. | Yes                     | [ 160 ] | 67% (show the card) |
| 2. | Yes, taken by the cadre | [ 2 ]   | <1% (show the card) |

- |    |                         |        |                        |
|----|-------------------------|--------|------------------------|
| 3. | Yes, taken by the cadre | [ 8 ]  | 3% (Did not show card) |
| 4. | Yes, taken by others    | [ 5 ]  | 2% (Did not show card) |
| 5. | Lost                    | [ 12 ] | 5%                     |
| 6. | No/not yet received     | [ 53 ] | 22%                    |

If no card, can be checked in the red, yellow and blue book ?  
N=78

- |    |  |        |                    |
|----|--|--------|--------------------|
| a. | Yes, name exist                        | [ 13 ] | 5% from 240        |
| b. | yes, name does not exist               | [ 12 ] | 5% Cont.to No. 49  |
| c. | Can not been check at yellow/blue book | [ 53 ] | 22% Cont.to No. 49 |

44. Notice the your child's RTH card or the books and write down when was the attendance during the previous six months : (may answer more than one) N=240

	<u>Per Month</u>	<u>Cumulatif</u>
1. April	[ 124 ] 52%	124 52%
2. March	[ 118 ] 49%	105 44%
3. February	[ 123 ] 51%	94 39%
4. January	[ 117 ] 49%	83 35%
5. December	[ 112 ] 47%	75 31%
6. November	[ 103 ] 43%	70 29%

Average = 697/6 = 116 48%

45. Did you attend the *Posyandu* in the month **April, 1994**? N=175

- |    |     |         |                                       |
|----|-----|---------|---------------------------------------|
| 1. | Yes | [ 124 ] | 71% 52% from 240 (Continue to No. 47) |
| 2. | No  | [ 51 ]  | 29%                                   |

46. If not, why? (may answer more than one) N=51
- |   |       |     |
|---|-------|-----|
| 1. This village don't have a <i>Posyandu</i> yet    | [ ]   |     |
| 2. <i>Posyandu</i> was not active last month        | [7 ]  | 14% |
| 3. <i>Posyandu</i> was to far from home             | [1 1  | 2%  |
| 4. Busy   | [11 ] | 22% |
| 5. Mother was outside town                          | [6 1  | 12% |
| 6. Child/relatives were sick                        | [8 ]  | 16% |
| 7. (Child's name) Complete Immunized                | [3 ]  | 6%  |
| 8. Mother felt no need to visit the <i>Posyandu</i> | [3 ]  | 6%  |
| 9. Immunizer did not come                           | [6 ]  | 12% |
| 10. Others _____                                    | [5 ]  | 10% |
| 11. Don't know                                      | [2 ]  | 4%  |
47. Did (child's name) received immunization at the lastime you attend the *Posyandu*? N=175
- |        |       |                             |
|--------|-------|-----------------------------|
| 1. Yes | [53 1 | 30% (Continue to Number 49) |
| 2. No  | [122] | 70%                         |
48. Why did (child's name) not received immunization? N=122
- |  |       |     |
|--|-------|-----|
| 1. Child do not need anymore because already completed immunized         | [71 ] | 58% |
| 2. Child doesn't need yet because to young (Unless 9 months for measles) | [21 ] | 17% |
- CHILD NEEDS, BUT DID NOT RECEIVE BECAUSE OF :**
- |   |        |     |
|---|--------|-----|
| 3. Child is to old (age is more than 12 months)         | [5 1   | 4%  |
| 4. Out of Vaccine                                       | [6 1 5 | %   |
| 5. Child has fever or sick                              | [7 ]   | 6%  |
| 6. Mother was afraid and don't want child get immunized | [1 ]   | <1% |
| 7. Don't know   | [11 ]  | 9%  |

## IMMUNIZATION

49. How many times did (child's name) get complete immunization?  
N=240

How many times :	<4 times	46 (19%)	Range = 1.110
	4-5	114 (48%)	Average = 4.0 ± 0.1
	>5	10 ( 4%)	Median = 4 times
	DON'T KNOW	70 (29%)	

If not remember fill in "99"

50. Do you have a RTH card/immunization card for (child's name)
- |                         |       |     |                       |
|-------------------------|-------|-----|-----------------------|
| 1. Yes - RTH            | [161] | 67% | N=240 (show the card) |
| 2. Yes - Control card   | [ ]   |     | (show the card)       |
| 3. Yes - taken by cadre | [4 ]  | 2%  | (Card must be shown)  |

4.	Yes, taken by the cadre	[6 ]	2% (card can't be seen)
5.	Yes, taken by others	[4 ]	2% (card can't be seen)
6.	Lost	[11 ]	5%
7.	No/Not yet	[54 ]	23%

If mother don't have or it can not be seen at the RTH card/control card but according to the mother (**child's name**) have received immunization it can then be checked at the village book/yellow book.

- |    |  |       |     |           |
|----|--|-------|-----|-----------|
| a. | Yes, name exist                          | [15 ] | 6%  |           |
| b. | Yes, but name does not exist in the book | [11 ] | 5%  | Continue  |
| c. | Can not be check in the yellow book      | [49 ] | 20% | to No. 53 |

51. Notice the Vaccination card and write down below the date of each vaccination :

BCG  (day/month/year)

BCG

\_\_\_\_\_

I

II

TTT

DPT

--	--	--

I

II

III

POLIO

[illegible]

## MEASLES

\_\_\_\_\_

Write down the day of birth on the RTH card/Control Card

Day	month	year

**Check the date, it should be the same as the one on the first page .**

### VITAMIN A

52. Notice the RTH card, and write down the date when (**child's name**) received a Vitamin A capsule with high doses :  
N = 118

#### Date of receive

1	49	41%
2	14	12%
3		
4		
5		
6		

3 child received before 1 year



# DIARRHEA

53. Did (Child's name) once suffer from diarrhea during the last two months ? N=240

- |               |        |     |                       |
|---------------|--------|-----|-----------------------|
| 1. yes        | [ 50 ] | 21% |                       |
| 2. No         | [189]  | 79% | Continue to Number 59 |
| 3. Don't know | [ 1 ]  | <1% | Continue to Number 59 |

54. What is the first help you gave during your child suffer from diarrhea? (you may answer more than one) N=50

- |  |       |     |
|--|-------|-----|
| 1. Nothing                               | [14 ] | 28% |
| 2. A socket of ORT                       | [21 ] | 42% |
| 3. Salt and Sugar Solution               | [ 4 ] | 8%  |
| 4. Rice Water                            | [ 1 ] | 2%  |
| 5. Other liquid (explain) _____          | [ 2 ] | 4%  |
| 6. Anti diarrhea medicine or anti biotic | [ 6 ] | 12% |
| 7. other (explain) TRADITIONAL MEDICINE  | [ 2 ] | 4%  |

55. Does (child's name) still suck? N=50

- |        |       |   |                             |
|--------|-------|---|-----------------------------|
| 1. Yes | 142   | 3 | 84%                         |
| 2. No  | [ 2 ] | 1 | 16% (fill in "5" at No. 56) |

56. During (child's name) has diarrhea how does the mother give breastfeeding..... (read the choices below to the mother) N=50

- |                            |       |     |                   |
|----------------------------|-------|-----|-------------------|
|                            |       |     | From Breastfeeder |
| 1. More than usual ?       | [11 ] | 22% | 26%               |
| 2. As usual (no changes) ? | [28 ] | 56% | 67%               |
| 3. Less than usual ?       | [ 3 ] | 6%  | 7%                |
| 4. Stopped                 | [ ]   | 3   |                   |
| 5. Do not suck anymore     | [ 8 ] | 16% |                   |

57. During (child's name) have diarrhea, how does the mother give other liquid..... (read the answers below to the mothers) N=50

- |   |       |   |     |
|---|-------|---|-----|
| 1. More than usual ?                                    | [16 ] | 1 | 32% |
| 2. As usual (no changes) ?                              | [25 ] |   | 50% |
| 3. Less than usual ?                                    | [ 4 ] |   | 8%  |
| 4. Stopped ?  | [ ]   | 1 |     |
| 5. Only breastfeeding (had never drink any other liquid | [ 5 ] | 1 | 10% |

58. During (child's name) have diarrhea, how does the mother give hard food or soft food..... (read the answers below to the mother) (N=50)

1. More than usual	[ 14 ]	28%
2. As usual (no changes)	[ 25 ]	50%
3. Less than usual	[ 5 ]	10%
4. Stopped	[ 1 ]	2%
5. Only breastfeeding	[ 5 ]	10%
6. Not eat yet, but have already drink other liquid	[ 1 ]	

C o n t i n u e t o N u m b e r 6 4

59. What is the first help that you give if (child's name) suffer from diarrhea? N=190

1. Nothing	[ 26 ]	14%
2. A socket of ORT	[ 92 ]	48%
3. Salt and Sugar Solution	[ 35 ]	18%
4. Rice Water	[ 2 ]	1%
5. Other Liquid (explain)	[ 19 ]	10%
6. Anti diarrhea medicine or anti biotic	[ 7 ]	4%
7. Others (explain)	TRADITIONAL MEDICINE [ 9 ]	5%

60. Does (child's name) still suck? N=190

1. Yes	[ 146 ]	77%
2. No	[ 44 ]	23% (fill in "5" at No. 61)

61. If (child's name) suffer from diarrhea how do you give breastfeeding..... (read the answers below to the mother) N=190

			From Breastfeeder
1. More than usual ?	[ 54 ]	28%	37%
2. As usual (no changes) ?	[ 83 ]	44%	57%
3. Less than usual ?	[ 7 ]	4%	5%
4. Stopped ?	[ 2 ]	1%	1%
5. Do not suck anymore	[ 44 ]	23%	

62. If (child's name) have diarrhea, how does the mother give other liquid..... (read the answers below to the mothers)  
(name child) N=190

1. More than usual ?	[ 54 ]	28%
2. As usual (no changes) ?	[ 89 ]	47%
3. Less than usual ?	[ 13 ]	7%
4. Stopped ?	[ 6 ]	3%
5. Only breast feeding (Had never drink any other liquid)	[ 28 ]	15%

63. If (child's name) have diarrhea, how does the mother give hard food or soft food..... (read the answers below to the mother) N=190

1. More than usual ?	[ 51 ]	27%
2. As usual (no changes) ?	[ 84 ]	44%
3. Less than usual ?	[ 16 ]	8%
4. Stopped ?	[ 10 ]	5%
5. Only breastfeeding	[ 26 ]	14%
6. Not eat yet, but have already drink other liquid	[ 3 ]	2%

64. If (Child's name) have diarrhea what are the signs that made the mother bring to the Health center/Hospital (may answer more than one) N=240

1. Vomiting	[ 52 ]	22%
2. Fever	[ 37 ]	16%
3. dry mouth, hollow eyes, less of urine		
☆ 4. Diarrhea continues dehydration)	[ 20 ]	11%
5. Diarrhea (approximately during 14 days)	[ 1 ]	<1%
6. Blood feces	[ 19 ]	8%
7. Lost of appetite for food	[ 98 ]	41%
8. Unawareness, worn out		

☆ 90. Obhetsk (new plain) BLEACH [ 50 ] 21%  
Mention minimize one = 98 (41%); two = 20 (8%)

65. Do you have ORT at home? N=240

1. Yes	[ 48 ]	20%	Should be shown)
2. No	[ 192 ]	80%	fill in "1" at Number 66)

66. Where did you get the ORT? N=240

1. No ORT at home			[192]
2. From <i>Posyandu</i> Cadre	FROM 48	29%	[14 ]
3. From Friends/neighbor		6%	[3 ]
4. From Health center/Hospital		58%	[28 ]
5. By at Dispensary		6%	[3 ]
6. Others (explain) _____			[ ]

# APPENDIX D

{CLUSTER LIST}

## DESA-DESA RANDOM PADA SURVEI PHASE I

KLUSTER NO.	PENDUDUK KUMULATIF	DESA-DESA	PENDUDUK DESA	KECAMATAN	KABUPATEN
1	20207	GAMSUNGI	9681	TOBELO	MALUKU UTARA
2	79465	UPT BIANG	2748	KAO	.
3	138723	KEL. SANTIONG	4706	TERNATE UTARA	.
4	197981	GUAEMAADU	927	JAILOLO	.
5	257239	PELITA JAYA	796	BACAN	.
6	316497	FALAHU	2200	SANANA	.
7	375755	GORUA	1572	MOROTAI UTARA	▪
6	435013	PEOOL	556	IBU	▪
9	494271	AUPONIA	531	TALIABU TIMUR	▪
10	553529	OME	1763	TIDORE	HALMAHERA TENGAH
11	612787	WASILE	434	WASILE	.
12	672045	TELAGA NIPA	1483	SERAM BARAT	.
13	731303	KAIRATU	6379	KAIRATU	MALUKU TENGAH
14	790561	WAHAI	3188	SERAM UTARA	.
15	8498 19	NEGERI LIMA	3221	LEIHITU	.
16	909077	WAAI	7527	SALAHUTU	.
17	986335	NOLLOTH	2647	SAPARUA	.
18	1027593	TRANSLOK KM 12	1474	AMAHEI	.
19	1086651	LEKU	462	BURU SELATAN	.
20	1146109	KWAOS	2030	SERAM TIMUR	.
21	1205367	BATU MEJA	10450	SIRIMAU	KODYA AMBON
22	1264625	BATU MERAH	22925	SIRIMAU	.
23	1323883	HALONG	9022	BAGUALA	.
24	1383141	AMAHUSU	3371	NUSANIWE	.
25	1442399	MANGA DUA	3916	NUSANIWE	.
26	1501657	DANAR	734	KEI KECIL	MALUKU TENGGARA
27	1560915	DULAT LAUT ISLAM	821	KEI KECIL	.
28	1620173	ADAUT	3377	TANIMBAR SELATAN	.
29	1679431	SOFYANIN	937	TANIMBAR UTARA	.
30	1 7 3 8 6 8 9	- LAWAWANG	361	BABAR	.
JUMLAH PENDUDUK :		1.777.795			
JUMLAH KLUSTER :		30			
INTERVAL :		59.256			
NOMOR RANDOM :		20207			

# APPENDIX E

## (SUMMARY OF BASELINE AND FINAL SURVEY RESULTS) BASELINE / FINAL SURVEY RESULTS

		BASELINE N = 240	FINAL N = 240
@	<b>RELIGION</b>		
	ISLAMIC	45%	63%
	CHRISTIAN	55%	37%
@	<b>SEX</b>		
	MALE	47%	47%
	FEMALE	53%	53%
@	<b>CHILD AGE</b>		
	0 - 11 MONTHS	58%	51%
	12 - 24 MONTHS	42%	49%
	<b><u>EDUCATION</u></b>		
@	LAST EDUCATION? ELEMENTARY SCHOOL, CAN READ OR CONTINUING EDUCATION	91%	92%
	<b><u>MOTHER TREATMENT</u></b>		
@	ON WHICH MONTH SHOULD THE MOTHER VISIT THE HEALTH SPECIALIST?		
	1 - 3 MONTHS (FIRST TRIMESTER)	35%	50%
	4 - 6 MONTHS (FIRST TRIMESTER)	27%	24%
	7 - 9 MONTHS (FIRST TRIMESTER)	17%	10%
@	BEST FOOD FOR PREGNANT MOTHER TO PREVENT ANEMIA?		
	GREEN VEGETABLES/PROTEIN	57%	68%
@	HOW MUCH SHOULD THE BODY WEIGHT INCREASE FOR A PREGNANT WOMAN		
	10 - 12KG	3%	6%
	HEAVY AS THE BABY	1%	19%
@	DURING THE PREGNANCY, HOW MUCH FOOD SHOULD THE MOTHER EAT?		
	MORE THAN USUAL	31%	38%
	AS USUAL	48%	46%
	LESS THAN USUAL	21%	16%
@	DOES THE MOTHER GO TO THE HEALTH CLINIC FOR EXAMINATION?		
	YES	70%	75%
	DON'T KNOW	30%	25%
@	HOW MANY TIMES DID YOU GO TO THE CLINIC BEFORE GIVEN CHILDBIRTH?		
	TWO OR MORE	74%	91%

# BASELINE / FINAL SURVEY RESULTS

		<u>BASELINE</u> N = 240	<u>FINAL</u> N = 240
@	DID YOU EVER BEEN VISITED BY A TBA FOR PREGNANCY		
	YES	41%	65%
@	HOW MANYTIMES HAVE YOU BEEN EXAMINED BY A TBA		
	< 2 TIMES	12%	13%
	> 2 TIMES	74%	86%
	MEAN	3.2	3.6
	DON'T KNOW	14%	1%
@	WHO HAVE ASSISTED YOU IN CUTTING THE UMBILICAL CORD?		
	MOTHER HERS ELF	1%	2%
	RELATIVES	3%	3%
	TBA	<b>69%</b>	63%
	HEALTH SPECIAUST	26%	32%
@	WHEN DID YOU STARTED TO CONTACT THE TBA?	(N= 166)	(N= 154)
	1 - 3 MONTHS (FIRST TRIMESTER)	35%	32%
	4 - 6 MONTHS (FIRST TRIMESTER)	18%	3 1%
	7 - 9 MONTHS (FIRST TRIMESTER)	43%	34%
@	WITH WHAT TOOL DID THE TBA CUT THE UMBIUCAL CORD?		
	BAMBOO	30%	29%
	RAZOR <b>BLADE</b>	18%	19%
	KNIFE	5%	1%
	SCISSOR	41%	5 1%
	OTHERS	1%	0%
	DON'T KNOW	5%	1%
@	WITH WHAT DID THE TBA TREAT THE UMBIUCAL CORD?		
	ASH	5%	<b>0%</b>
	AKCOHOL	20%	40%
	METHYLATED SPIRITS	<b>18%</b>	14%
	IODINE	5%	4%
	OTHERS	43%	41%
	DON'T KNOW	9%	1%
@	ARE YOU STILL BEEN <b>VISITING</b> BY A TBA?		
	YES	91%	97%
@	DID THE TBA REMIND YOU TO GET TT IMMUNIZATION?		
	YES	14%	35%

# BASELINE / FINAL SURVEY RESULTS

## BASELINE

N = 240

## FINAL

N = 240

@ DID THE TBA REMIND YOU THAT YOUR CHILD NEED TO BE IMMUNIZED?

YES

273%

50%

@ WHY IS IT IMPORTANT FOR A MOTHER TO GET TT IMMUNIZATION?

TO PREVENT MOTHER AND CHILD FROM TETANUS

5%

30%

@ HOW MANY TIMES SHOULD A MOTHER RECEIVE TT IMMUNIZATION?

2 TIMES OR MORE

41%

59%

@ DOES THE MOTHER HAVE A CARD FOR MOTHER HEALTH?

YES

7%

6%

@ IS THE MOTHER PREGNANT-?

YES

8%

5%

## GROWTH MONITORING

@ DOES THIS VILLAGE HAVE A POSYANDU

YES

73%

92%

@ DO YOU HAVE A ROAD-TO-HEALTH CARD?

YES (CARD SHOWN)

42%

67%

YES, TAKEN BY THE CADRE (CARD SHOWN)

7%

1%

NO/NOT RECEIVED YET

41%

22%

YES, NAME IS IN THE YELLOW/BLUE BOOK

0%

5%

@ DID THE MOTHER ATTEND THE POSYANDU FOR SIX MONTHS?

### PER MONTH CONTINUES

AUGUST	23%	23%
JULY	30%	20%
JUNE	33%	18%
MAY	32%	17%
APRIL	32%	14%
MARCH	29%	11%

AVERAGE POSYANDU ATTENDANCE = 30%

### PER MONTH

APRIL	52%	52%
MARCH	49%	44%
FEBRUARY	51%	39%
JANUARY	49%	35%
DECEMBER	47%	31%
NOVEMBER	43%	29%

AVERAGE POSYANDU ATTENDANCE = 48%



# BASELINE / FINAL SURVEY RESULTS

## BASELINE

N = 240

## FINAL

N = 240

### IMMUNIZATION

@	AGE FROM 12 TO 23 MONTHS	(N= 102)	(N= 118)
	BCG	66%	73%
	DPT- 1	67%	74%
	DPI- 2	63%	71%
	<b>DPT- 3</b>	57%	70%
	POLIO- 1	67%	74%
	POUO-2	62%	71%
	POUO-3	57%	70%
	MEASLES	54%	68%
	COMPLETE	51%	64%
	COMPLETE (12-23 MONTHS)	45%	60%
	COMPLETE (12-23 MONTHS) AND CORRECT	33%	54%
	DROP-OUT (DPT1 - POUO3)	15%	4 %
@	AGE FROM 0 TO 11 MONTHS		(N= 122)
	BCG	49%	66%
	DP-- 1	51%	65%
	DPT-2	44%	50%
	DPT-3	35%	38%
	POLIO-1	51%	65%
	<b>POLIO- 2</b>	44%	50%
	<b>POLIO- 3</b>	34%	38%
	CAMPAK	27%	19%
	COMPLETE	25%	19%

### DIARRHEAL DISEASE

@	DID THE CHILD SUFFERS FROM DIARRHEA ONCE?		
	YES	20%	21%
@	WHAT IS THE FIRST THING THE MOTHER GIVE TO A CHILD WHEN SUFERING FROM DIARRHEA?	(N=49)	(N=50)
	ORT/ORS	28%	50%
	RICE WATER	2 %	2 %
	ANTI DIARRHEA/ANTIBIOTIC	22%	12%
	OTHER LIQUID	8 %	4 %
	OTHERS	20%	4 %
	NOTHING	22%	28%

# BASELINE / FINAL SURVEY RESULTS

	BASELINE	FINAL
	N = 240	N = 240
@ DURING CHILD SUFFER FROM DIARRHEA, HOW DID THE MOTHER GIVE BREASTFEEDING		
MORE THAN USUAL	26%	22%
AS USUAL	53%	56%
LESS THAN USUAL	7 %	6 %
STOPPED	1%	0 %
DO NOT GIVE BREASTFEEDING ANYMORE	13%	16%
@ DURING CHILD SUFFER FROM DIARRHEA, HOW DID THE MOTHER GIVE OTHER UQUID?		
MORE THAN USUAL	29%	32%
AS USUAL	32%	50%
LESS THAN USUAL	22%	8 %
STOPPED	4%	0 %
ONLY BREASTFEEDING (NEVER DRINK OTHER LIQUID)	12%	10%
@ DURING CHILD SUFFERS FROM DIARRHEA, DID THE MOTHER GIVE EXTRA FOOD?		
MORE THAN USUAL	23%	28%
AS USUAL	25%	50%
LESS THAN USUAL	32%	10%
STOPPED	6 %	2 %
ONLY BREASTFEEDING	12%	10%
NOT EATEN YET, BUT HAVE ALREADY DRINK OTHER LIQUID	2 %	0%
@ IF, DURING CHILD SUFFERS FROM DIARRHEA WHAT IS THE FIRST (N= 191) THING YOU GNE?		(N= 190)
ORT/ORS	38%	48%
RICE WATER	0%	1%
ANTI DIARRHEA/ANTIBIOTIC	6 %	4 %
OTHER UQUID	17%	10%.
OTHERS	11%	5 %
NOTHING	6 %	14%
@ IF, DURING CHILD SUFFERS FROM DIARRHEA HOW DO YOU GIVE BREASTFEEDING?		
MORE THAN USUAL	28%	28%
AS USUAL	45%	44%
LESS THAN USUAL	9%	4%
STOPPED	3 %	1%
DO NOT GIVE BREASTFEEEDING ANYMORE	16%	23%

# BASELINE / FINAL SURVEY RESULTS

## BASELINE

N = 240

## FINAL

N = 240

@ IF, DURING CHILD SUFFER FROM DIARRHEA HOW DO YOU GNE  
OTHER UQUID?

MORE THAN USUAL	28%	<b>28%</b>
AS USUAL	28%	<b>47%</b>
LESS THAN USUAL	22%	<b>7 %</b>
STOPPED	1%	<b>3 %</b>
ONLY BREASTFEEDING (NEVER DRINK OTHER UQUID)	20%	<b>15%</b>

@ DURIING CHILD SUFFER FROM DIARRHEA DOES THE MOTHER GIVE  
EXTRA FOOD?

MORE THAN USUAL	<b>21%</b>	<b>27%</b>
AS USUAL	<b>31%</b>	<b>44%</b>
LESS THAN USUAL	<b>23%</b>	<b>8 %</b>
STOPPED	<b>2 %</b>	<b>5 %</b>
ONLY BREASTFEEDING	<b>19%</b>	<b>14%</b>
NOT EATEN YET, BUT HAVE ALREADY DRINK OTHER LIQUID	<b>3 %</b>	<b>2 %</b>

@ IS THERE A SOCKET OF ORT AT HOME?

(N=240)

(N=240)

YES	<b>13%</b>	<b>20%</b>
THERE IS NO ORT	<b>87%</b>	<b>80%</b>

@ FROM WHOM DID YOU GET A SOCKET OF ORT?

POSYANDU CADRE	<b>4 %</b>	<b>29%</b>
DISPENSARY	1 %	<b>6%</b>
HEALTH CENTER	<b>8 %</b>	<b>58%</b>
FRIEND/NEIGHBOR	0%	<b>6%</b>

P V O PCI

COUNTRY INDONESIA

FUNDING YEAR 1991 - 94

New or Expansion Project NEW

Baseline or Final Survey FINAL

#	INDICATOR (submit results only for indicators that reflect project interventions)	RESULTS Numerator (N) Denominator (D) Percent (P)
1	<u>NUT: Initiation of Breastfeeding</u> - Percent of infants/children (less than 24 months) who were breast-fed within the first eight hours after birth.	N=___ P=___ D=___
2	<u>NUT: Exclusive Breastfeeding</u> - Percent of infants under four months, who are being given only breast milk.	N=___ P=___ D=___
3	<u>NUT: Introduction of Foods</u> - Percent of infants between five and nine months, who are being given solid or semi-solid foods.	N=___ P=___ D=___
4	<u>NUT: Persistence of Breastfeeding</u> - Percent of children between 20 and 24 months, who are still breastfeeding (and being given solid/semi-solid foods).	N=___ P=___ D=___
5	<u>CDD: Continued Breastfeeding</u> - Percent of infants/children with diarrhea in the past two weeks who were given the same amount or more breast-milk.	N=39 P=78% D=50
6	<u>CDD: Continued Fluids</u> - Percent of infants/ children (less than 24 months) with diarrhea in the past two weeks who were given the same amount or more fluids other than breastmilk.	N=41 P=82% D=50
7	<u>CDD: Continued Foods</u> - Percent of infants/ children (less than 24 months) with diarrhea in the past two weeks who were given the same amount or more food.	N=39 P=78% D=50
8	<u>CDD: ORT Usage</u> - Percent of infants/children (less than 24 months) with diarrhea in the past two weeks who were treated with ORT.	N=28 P=56% D=50
9	<u>Pneumonia Control: Medical Treatment</u> - Percent of mothers who sought medical treatment for infant/child (less than 24 months) with cough and rapid, difficult breathing in the past two weeks.	N=___ P=___ D=___
10	<u>EPI: Access</u> - Percent of children 12 to 23 months who received DPT1.	N=89 P=74% D=121
11	<u>EPI: Coverage</u> - Percent of children 12 to 23 months who received OPV3.	N=86 P=71% D=121
12	<u>EPI: Measles Coverage</u> - Percent of children 12 to 23 months who received Measles vaccine.	N=83 P=69% D=121
13	<u>EPI: Drop Out Rate</u> - Percent change between DPT1 and DPT3 doses $[(DPT1-DPT3) \div DPT1]$ for children 12 to 23 months.	N=3 P=3% D=89
14	<u>MC: Maternal Card</u> - Percent of mothers with a m a t e d card.	N=22 P=9% D=240
15	<u>MC: Tetanus Toxoid Coverage (Card)</u> - Percent of mothers who received two doses of tetanus toxoid vaccine (card). or proof from vaccine book (54/240)	card only = 17/240 N=54 P=23% D=240
16	<u>MC: Ante-Natal Visits (Card)</u> - Percent of mothers who had at least one ante-natal visit prior to the birth of the child (card). + report = 181/240	card only = 18/240 N=181 P=75% D=240
17	<u>MC: Modern Contraceptive Usage</u> - Percent of mothers who desire no more children in the next two years, or are not sure, who are using a modern contraceptive method.	N=___ P=___ D=___

COMMENTS: